AMERICAN

RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

ASSISTANT EDITORS:

JAMES T. HODGE, *For Mining and Metallurgy.*
CHARLES T. JAMES, *For Manufactures and the Mechanic Arts.*
M. BUTT HEWSON, *For Civil Engineering.*

SATURDAY, APRIL 27, 1850.

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ESTABLISHED IN 1831.

NEW-YORK:

PUBLISHED WEEKLY, BY

JOHN H. SCHULTZ & CO.

Room 12, Third Floor,

No. 136 Nassau Street.

FARMERS! ATTENTION!!

John Mayher & Co's

NEW AGRICULTURAL WAREHOUSE AND SEED STORE,

197 WATER STREET, NEW YORK.

Where they have for Sale, the largest and most complete assortment of Farming Implements, ever offered for sale in this city—all of which they will sell 10 per cent. Cheaper than the same kind of Goods can be bought at any other house in the city. Our Goods are all Warranted to give satisfaction.

FARMERS wanting to purchase, will please call and examine our *Stock* before buying elsewhere.

Among our assortment may be found the Celebrated Highest Premium Eagle Ploughs! together with all the most approved Ploughs now in use.

Also,—Horse Powers, Threshing Machines, Fan Mills, Corn Shellers, Straw Cutters, Corn Mills, Seed Sowers, Churns, Ox Yokes, Ox Scrapers, Hay Rakes, Horse Rakes, Patent Chain Pump (that never freezes nor rusts), and other Pumps; in fact we have everything for Farming Purposes—together with Guano, Bone Dust and other Fertilizers.

JOHN MAYHER & CO.,
197 Water st., N. Y.

February 9, 1850.

N.B.—J. M. & Co. also continue their Old Stand, at 195 Front street, near Fulton Market.

STABILITY—SECURITY—PERPETUITY.

Mutual Life Insurance Co. of New York.

No. 35 WALL STREET.

A MILLION OF DOLLARS

Securely invested in Bonds and Mortgages on real estate in this city and Brooklyn, and stocks of the State and City of New York and United States Government.

This fund is rapidly increasing, by a widely extended and prosperous business.

The company declared a dividend of profits of fifty-two per cent. on all existing policies on the 31st of January, 1848.

All the Profits are Divided Among the Insured.

The premiums are payable in Cash annually, semi-annually, or quarterly, interest being added on the deferred payments.

The cash principle adopted by this company secures to the parties for whose benefit the insurances are effected, the whole of the advantages, without subjecting them to the heavy drawback of accumulated premium notes.

Persons may effect insurance on their own lives and the lives of others.

A married woman can insure the life of her husband, the benefits of which are secured by law for the exclusive use of herself or children.

Clergymen and all others dependent upon salaries or their daily earnings are specially invited to avail themselves of a resource whereby their surviving families may be secured from the evils of penury.

Pamphlets explanatory of the principles of Mutual Life Insurance, and illustrating its advantages, with forms of application, may be obtained at the office of the company, 35 Wall street, or of any of its agents.

TRUSTEES.

Jos. B. Collins,	David C. Colden,
Wm. J. Hyslop,	Alfred Edwards,
R. H. McCurdy,	Wm. Betts,
Fred. S. Winston,	Joseph Blunt,
C. W. Faber,	Isaac G. Pearson,
John P. Yelverton,	Henry Wells,
Theo. Sedgwick,	Wm. Moore,
Stacy B. Collins,	Zebedee Cook,
John H. Swift,	Jona. Miller,
John Wadsworth,	David A. Comstock,
S. M. Cornell,	Robert Schuyler,
Gouv. M. Wilkins,	James Chambers,
John V. L. Pruyn,	Joseph Tuckerman,
Fred. Whittlesey,	Moses H. Grinnell,
Charles Ely,	Wm. J. Banker,
John C. Cruger,	Eugene Dutilh,
Walter Joy,	Francis S. Lathrop,
Alfred Pell,	John C. Thatcher.

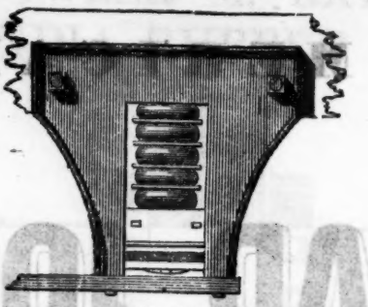
JOSEPH. B. COLLINS, President.
ISAAC ABBATT, Secretary. 3m9

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by

E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

FULLER'S PATENT INDIA RUBBER SPRING.



THESE SPRINGS ARE THE CHEAPEST, the lightest and most durable of any yet known. They are easily applied to new or old cars, and there is small possibility of any accident occurring to them.

Other parties through Mr. Ray set up claims to an India Rubber Spring which, though the same in principle, is very inferior in its working and durability.—Actions are in progress for an Infringement on Fuller's Patent against parties using that Spring.

The superiority of Fuller's Spring over that claimed by Mr. Ray is fully established and has frequently been testified to. The following are from gentlemen who have had much experience with both Springs.

—

"It will afford me pleasure to recommend your springs to the companies in this region, in preference to Ray's which I am confident are inferior in mechanical arrangement to yours." JOHN M'RAE,
Engineer S. Carolina R. R., Charleston.

—

"I do not hesitate to allow you to say that I concur in Mr. M'Rae's opinion that Ray's springs are inferior in mechanical arrangement to Fuller's. I repeatedly expressed that opinion long before Mr. M'Rae had seen your springs (as I believe) and entertain it still." WM. PARKER,
Gen'l Supt. of Baltimore and Ohio R. R.

—

Office of Sup't Norwich & Worcester R.R Co.
December 26, 1849.

"I most fully concur in the opinion of Jno. McRae, Engineer of S. Carolina Railroad, that 'Rays Springs are inferior to Fuller's Springs;' and shall with pleasure recommend them to all Railroad Companies for adoption. I have used both springs on this road and have no hesitation in saying that I should in all cases prefer Fuller's Spring."
SAM'L H. P. LEE, JR.,
Sup't and Engineer.

—

Office B. & P. R. R. Co.,
Boston, 20th December, 1849.

"This company have cars fitted up with both Ray's and Fuller's 'Metallic India Rubber Springs,' and I do not hesitate to say that Fuller's arrangement is *very much superior* to Ray's.
W. RAYMOND LEE, Supt.

—

The following result has been obtain d by experiment upon one railroad.

A set of Trucks fitted with Steel Springs cost	$190·77	and weigh	2355 lbs.
The same with Fuller's Springs, . . .	131·71	"	1911 lbs.
Difference, . .	$59·06	"	444 lbs.

Not only is there an advantage in the cost, but owing to the great reduction in weight, the car can be made lighter throughout, and so an enormous saving in weight may be effected in a Train.

G. M. KNEVITT, 38 Broadway, N. Y.,
General Agent for the U. S.

The Springs can also be had of
JAMES LEE & CO., 18 India Wharf, Boston, &
JAS. THORNLEY, 110 Chestnut St., Philad.
January 2, 1850.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.
May 28, 1849.

NOTICE TO

Superintendents of Railroads.

TYLER'S PATENT SAFETY SWITCH.—The undersigned would respectfully call their attention to his Patent Safety Switch, which from long trial and late severe tests has proved itself perfectly reliable for the purpose for which it was intended. It is designed to prevent the train from running off when the switch is set to the wrong track by design or accident. The single rail or gate switch is established as the best and safest switch for the ordinary purpose of shifting cars from one track to another, but it is liable to the serious evil of having one track open or broken when connected with the other. My improvement entirely removes this evil, and while it accomplishes this important office, leaves the switch in its original simplicity and perfection of a plain unbroken rail, connecting one track with the other ready for use.

The following decision of the Commissioner of Patents is respectfully submitted to Railroad Engineers, Superintendents, and all others interested in the subject. P. B. TYLER.

(COPY.)

UNITED STATES PATENT OFFICE,
Washington City, D.C., April 28th, 1846.

SIR: You are hereby informed that in the case of the interference between your claims and those of Gustavus A. Nicolls, for improvements in safety switches—upon which a hearing was appointed to take place on the 3d Monday in March, 1846, the question of priority of invention has been decided in your favor. Inclosed is a copy of the decision. The testimony in the case is now open to the inspection of those concerned.

Yours respectfully, EDMUND BURKE,
Commissioner of Patents.

To Philos B. Tyler.

Any further information may be obtained by addressing P. B. TYLER, Springfield, Mass., or JOHN PENDLETON, Agent, 149 Hudson St., New York.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,
SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.
Philadelphia, June 16, 1849. 1y25

C. W. Bentley & Co,

IRON Founders, Portable Steam Engine Builders and Boiler Makers, Corner Front and Plowman Sts., near Balttmore St. Bridge,

BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupyidg but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet.)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose, where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fillings for Steam, Water, Gas, etc., constantly on hand,
Baltimore, June 6, 1849.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

Coal.

CUMBERLAND SEMI-BITUMINOUS COAL superior quality for Locomotives, for sale by

H. B. TEBBETTS,
No. 40 Wall St., New York.
May 12, 1849. 1m19

IRON BRIDGES, BRIDGE & ROOF BOLTS, etc. STARKS & PRUYN, of Albany, New York, having at great expense established a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished several Iron Bridges for the Erie Canal, Albany Basin, etc. —and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook, Nelson J. Beach, Jacob Hinds,	Canal Commissioners of the State of New York.
Willard Smith, Esq.,	Engineer of the Bridges for the Albany Basin.
Messrs. Stone & Harris,	Railroad Bridge Builders,
Mr. Wm. Howe,	Springfield, Mass.
Mr. S. Whipple,	Engineer & Bridge Builder, Utica, N. Y.

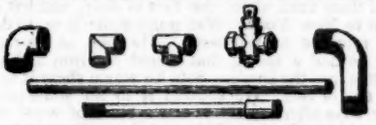
January 1, 1849.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¼ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by

MORRIS, TASKER & MORRIS.

Warehouse S. E. Corner of Third & Walnut Streets,

PHILADELPHIA.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St., Philadelphia.

November 3, 1849. 6m*

Mattewan Machine Works.

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern—also *Tenders, Wheels, Axles,* and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC., Of any required size or pattern, arranged for driving *Cotton, Woollen, or other Mills,* can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY, Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.

Turning Lathes, Slabbing, Planing, Cutting and *Drilling Machines,* of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 66 Beaver street, New York.

WM. B. LEONARD, *Agent.*

☞ HEAD QUARTERS FOR RUBBER GOODS. ☜

The Union India Rubber Company,

MANUFACTURERS AND DEALERS IN EVERY VARIETY OF

GOODYEAR'S PATENT METALLIC RUBBER FABRICS,

Which they offer on the most liberal terms at their Warehouse,

NO. 19 NASSAU STREET, NEW YORK.

Articles which this Company has the exclusive right to make comprise in part

Beds,	Overcoats,	Life Preservers,	Mail Bags,	Camp Blankets,
Pillows,	Leggins,	Boat Floats,	Breast Pumps,	Travelling Bags,
Cushions,	Syringes,	Souwesters,	Saddle Bags,	Wading Boots,
Caps,	Canteens,	Gun Cases,	Clothing of all kinds,	Horse Covers,
Tents,	Buoys,	Portable Boats,	Carriage Cloth, assor.	Piano Forte Covers,
Bottles,	Maps,	Horse Fenders,	Hospital Sheeting,	Railroad Gum,
Tubs,	Sheet Gum,	Water Tanks,	Mattrass Covers,	Hose, all kinds,
Caps,	Tarpaulins,	Army Goods,	Bathing Caps,	Shower Baths,
Pants,	Life Jackets,	Navy Goods,	Baptismal Pants,	Chest Expanders.

Together with *all new applications of the Patent Rubber,* which with Boots and Shoes, Packing, Machine Belting, Suspenders, Gloves and Mittins, Tobacco Wallets, Balls, Baby Jumpers, Elastic Bands, etc., etc., will be sold to the Trade at Factory prices.

*** All orders for special articles to be manufactured, should be accopanied with full descriptions and drawings.

October 20, 1849.

RAILROAD India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metalic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.

1849.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

☞ Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required. 4tf

THE NEWCASTLE MANUFACTURING Co. continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats. Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
President of the Newcastle Manuf. Co.

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

☞ *The above may be had at order at our Car Factory,*

REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
} SPRINGFIELD, MASS.

1y48

Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.

Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT
cor. Steuben and Water sts. Albany

August 24, 1848.

NEW YORK IRON BRIDGE COMPANY.

The Bridges manufactured by this Company having been fully tested on different Railroads, by constant use for more than two years, and found to answer the full expectations of their most sanguine friends, are offered to the public with the utmost confidence as to their great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time it is so arranged as to secure the combined principles of the *Arch, Suspension and Triangle*, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

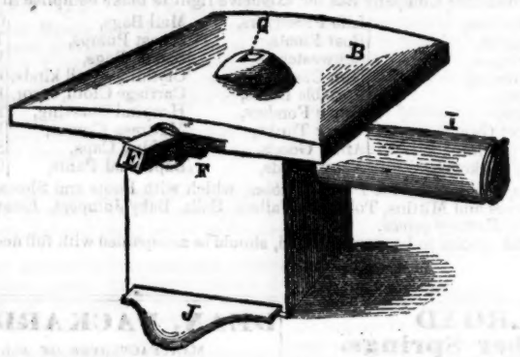
THE NEW YORK IRON BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, at short notice, and at moderate prices.

Models, and pamphlets giving full descriptions of the above BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 39 Jauncey Court, Wall st., or of W. RIDER & BROTHERS, 19 *Nassau Street*, where terms of contract will be made known, and where orders are solicited.

M. M. WHITE,
Agent for the Company.

August 20, 1849.

E. Harris' Patent Rotary Blacksmith Tuyere.



LETTERS Patent were issued January 9, 1849, to E. HARRIS, of Springfield, for an Improved Rotary Blacksmith Tuyere. Since that time there have been some hundreds put in operation, giving satisfaction and full proof of superiority over all others.

This Tuyere is so arranged that by one movement it can be changed from the largest work to the smallest; at the same time the fire is changed in proportion, thereby making a great saving in coal. Words cannot convey the full merits of this Tuyere; nor is it deemed necessary to speak in disparagement of other Tuyeres, as every smith is capable of judging for himself, and will give merit where merit is due.

I will simply say that there has not been a single instance where I have had my Tuyere put in use but it has given full satisfaction, and is recommended by all who have used them, as being superior to any other ever introduced. I would invite all to give them a trial; and the names of those using them being given, I hope it may induce others to try them; they recommend themselves.

Western Railroad Shop,	Springfield,	Mass.
" "	Pittsfield,	"
Connecticut val."	Springfield	"
" "	N. Hampton	"
Hartford "	Hartford,	Conn.
New Haven "	New Haven	"
Norwich and Worcester,	Norwich	"
N. York and N. Haven,	New Haven	"
Saratoga and Whitehall,	Saratoga,	N. Y.
Vermont Central,		
Hudson and Berkshire,	Hudson,	
L. Kingsley,	Canton,	Mass.
Hadley Falls Co.	Ireland, W. Springfield,	Mass.
Sidney Patch,	Boston,	"
Ames Manuf. Cor.,	Chickopee,	"
American Machine w'ks,	Springfield	"
Dean, Packard & Mills	"	"
G. Frank Bradley,	N. Haven,	Conn.
Andrew Baird,	"	"
Collis & Lawrence	"	"
Slate & Brown,	Windsor Locks,	
Gage,	Nashua,	N. H.
Machine shop,	Manchester,	"
Louis F. Lanney,	Baltimore,	Md.
J. H. Baerdid,	179 Chambers st.	N. Y.
J. Fanning	Rochester,	"
G. W. Hunt	41 Gold st.	"
Chamberlain & Waldo,		"
P. S. Burges, carriage maker,		"
Samuel Miller,		"
J. Leggett,	Steverson falls,	"
J. E. Harris,	Hillsdale,	"
John L. Graham,	Albany,	"
David Dalsell,	South Egremont,	Mass.
Roya & Wilcock,	Berlin,	Conn.

Agents for the sale of Tuyeres:
B. B. Stevens in New York and Connecticut.
A. J. VanAllen has the Agency for the Western and Southern States, and is now travelling through those States. Any communication addressed to the patentee will receive prompt attention.

E. HARRIS, Patentee,
Springfield, Mass.

November 23, 1849.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849. 6m33

Gas Fixtures.

FIXTURES for Burning Gas for Lighting Public Buildings, Private Dwellings, Stores and Factories, manufactured by the subscriber in great variety. Orders by Mail, or left at the Factory on Causeway street, will be promptly attended to.

HENRY N. HOOPER & CO.

Boston, March 23, 1850. 6m13

F. M. Ray's Patent India-rubber Car Springs.

India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, *as will invariably be done in every case of such violation.*

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Fuller claims to be his invention, was invented by Mr. Ray in 1844.—In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his retnrn said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of *Goodyear's Metallic Rubber*, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Knevitt refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Knevitt, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

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ASSISTANT EDITORS,

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South Carolina.

The iron ores of this State occur in its northern part among the spurs of the Allegheny mountains. They are principally contained in a narrow belt of slates, which pursue a northeast and southwest course through parts of York, Union and Spartanburg districts, crossing Broad river at the Cherokee Ford. With the mica slates are associated beds of limestone as in all the hematite districts of the Atlantic States. These limestones crop out along the line of an anticlinal axis, the slates on the north side dipping to the northwest, and on the south side to the southeast at angles varying from 45° to 80°.

For the description of this region, as well as the map accompanying it, I am indebted to the Report on the Geological Survey of the State, by M. Tuomey, Esq. According to this report, the metalliferous portion of these rocks is limited to a length of only from six to eight miles. The ores consist of the three varieties—*magnetic, specular* and *hematite*, all conveniently associated together, and in close proximity to beds of limestone. The country is hilly, rising boldly from the banks of the streams by which it is well watered. These also afford convenient privileges for the establishment of works in the immediate neighborhood of the mines. The surface appears to be well wooded from the fact that charcoal is rated at only from two and a half to 4 cents per bushel.

The principal localities of the different ores are designated on the map by appropriate letters. The *magnetic oxide* is described as occurring in a band of talcose slate, whose greatest width is within half a mile. As in the other States, where this ore occurs, so here it is found to conform to the stratification of the rocks which contain it, but with degrees of thickness varying between great extremes.—Though subject to these irregularities, instances are wanting elsewhere of a bed or vein thinning out together, as Mr. Tuomey considers they sometimes do in this region. A thin seam in other places usually conducts the miner to another swelling out of the vein; and when its continuity is interrupted by a dyke or horse or cap, it is again found beyond, though it may be thrown out of its course. The slates are often penetrated with the ore, and thin layers of them separate two parallel beds of ore, so that one might be worked to great extent without any indication of the close proximity of another.

The workings so far are superficial; no advantage has as yet been taken of the rapid ascent of the hills near the water courses, to drive in upon the veins from their level.

The ore seems to vary in quality at the different openings near the river; some of it is hard and compact, difficult to work; and some is loose and friable, black and granular and highly magnetic. The quantity is very great, and the expense of raising it is moderate.

From the North Carolina line the range of the limestone is very regular toward the southwest till it reaches Dear Little Creek. Here it seems to be thrown off toward the north; and in the break are interposed the talcose slates containing the magnetic ores; as if these by their igneous agency had been the cause of the disturbance. The talcose slates rest against the limestone dipping towards the southeast. Above them are beds of mica slate forming the northern slopes of Kings mountain, which have the same inclination; while over the other side of the limestone-axis, to the northwest, mica slate is again seen next this rock with no talcose slates interposed, dipping in the contrary direction—to the northwest.

This mica slate on both sides of the axis is the repository of a variety of ore which appears to be specular and magnetic ore mixed; it is of dark color frequently, and is somewhat magnetic, but gives a red powder. It appears on the north side of Gelky's mountain in considerable quantity, and again near the furnace on People's creek. Mr. Tuomey regards this ore as passing from the red peroxide at the surface to grey and magnetic ores below, and still farther down to pyritous iron ore, if not to sulphuret of iron.

Near King's Mountain Iron works, on Dear Little Creek, are other outcrops on the same range of ore. These are on the east side of Broad river.—They have furnished a large amount of ore to these works.

At the "Bird Bank," on the Meadow Branch of King's Creek, the same ore is found interstratified with the mica slates. Its quantity is very great; its color is black, with thread like veins of quartz running through it.

The Hardin bank is directly west of this, on Jumping branch. The ore lies in a bed of regular dimensions from three to four feet thick, dipping 45° to 80° toward the northwest. It is of slatiform structure, the seams running with those of the mica slate. "Near the surface the ore consists of red and yellow ochres, with harder portions, giving a brown powder and streak—being portions of the bed, that have assumed the form of the hydrous peroxide or limonite (hemotite). For about 20 feet below the surface these ores continue the same;—but below that they are grey, showing however, when indented by the hammer, a reddish streak. They are also to some extent magnetic. At water level pyrites makes its appearance; and even native sulphur is found coating the surface of the fissures in the ore,

The ore is not compact but rather composed of small, slightly cohering grains, having a gray dull lustre, excepting where it has been crushed, and there the red powder of the specular oxides is seen.

After a careful examination of the ore of this bed, I am fully convinced that it was originally a sulphuret of iron, or what is known at the mines as iron pyrites; and that if it be pursued to a sufficient depth, it will terminate in that mineral. The shaft sunk on the bed is at present about 50 feet in

depth, which is about the level of natural drainage —so that it is placed beyond atmospheric influences.

It is not a little curious that pyrites will resist decomposition when placed under water, while if it be exposed to the atmosphere, it is readily acted upon, and reduced to an oxide. Nearly every gold mine in the State offers examples in illustration of this fact. For, wherever oxide of iron is found mingled with the ores, when water is reached it is invariably found in the form of iron pyrites. At the depth mentioned above, the bed is mixed with iron pyrites, and the ore may be traced through every stage, to the red oxide, of which the bed is composed near the surface.

We have first the sulphuret or iron pyrites, which by decomposition, becomes probably the protoxide, a portion of which combines with another atom of oxygen and forms peroxide, the mixture of the two now existing together, producing the magnetic oxide. The remaining protoxide is converted into peroxide, and the whole is now the specular oxide or red ore which we find towards the surface. And if, during this change, water enter into combination with the ore, we shall have the hydrous peroxide or brown ore, which, I have already remarked, is found in this mine. Every step in this process may in like manner be observed at the furnace bed, on People's creek.

With these facts before one, and supported as they are by numerous analogies in other mines, it is impossible to avoid the conclusion that these ores are the result of the decomposition of iron pyrites."*

I have been led into this long quotation from the peculiarity of the facts to this neighborhood, at least so far as respects iron mines. The analogies in other mines referred to by the author are no doubt the ferruginous veins containing gold, which I have myself noticed in North Carolina becoming pyritous below the water level. And so the veins of copper ores, which I have seen in Cuba and elsewhere producing carbonates and oxides at the surface, turn to sulphurets below, all which has been generally ascribed to the decomposing atmospheric influences. If these veins of iron ore are of similar character, then their productiveness is limited to the portion of the veins lying above the water level; and this will depend upon the nature of the surface. As the land appears to be hilly, where the ores are found, it is probable that large quantities may long be obtained unmixed with sulphur.

Hematite is of frequent occurrence in these rocks, particularly in Spartanburg and Pickens districts. The latter is the very mountainous district in the northwest corner of the State. Mr. Tuomey notices the following localities of this ore. On the Pacolet, a stream which enters Broad river on the west side, a little to the south of the limits of the map. Here it is found in uncertain quantities four miles north of the furnace on this stream.—This furnace has been supplied wholly with hematite. Near the Cowpens furnace on the western border of the map, it is abundant, and so continues many miles west. It is the only ore used by this furnace. Near Cherokee Ford it is found of good quality; and so at many other localities noted in the work it appears to be abundant, but little used. Being on the gold range some of the hematites are auriferous. I do not quote the analyses of these ores, as they appear to be made without reference to some of the universal constituents of the ore.

On Crooked creek in Pickins district it is found —a compact clean ore, working freely and making good iron; it was formerly worked in a bloomery fire.

Mr. Tuomey met with a vein of this ore associated with a quartz vein containing crystals of schorl, which though unimportant in its thickness, he traced seven miles.

Bog ores are also abundant at many localities in various parts of the State. Though they offer great facilities for the manufacture of iron, these are not improved.

I find some difficulty in ascertaining from the report the exact number of blast furnaces in the State. In different parts of it the following are mentioned:

1 Cherokee Creek,	South Carolina Manuf. Co.
1 Near Cowpens,	
1 On the Pacolet.*	
1 On People's creek.†	
1 On Kings creek,	Kings Mountain Company.
1 Below Cherokee Ford,	
4 Cherokee Ford—Cherokee Manufacturing Co.	
10	

But the author commences the account of them which I shall quote, by remarking "there are in the State about eight blast furnaces. Two of these belong to the South Carolina manufacturing company, and are situated in Spartanburg district.—They have a furnace on Cherokee creek, and own the mines near the Cowpens. The dimensions of this furnace are as follows:

	Ft.	in.
Height	28	00
Width at boshes	7	06
Hearth‡	1	10

and the charge is:

Ore (brown hematite)	12,000 pounds.
Charcoal	600 bushels.
Limestone	1,500 pounds.

The yield is about 5,000 pounds of iron.

The price of charcoal is 2½ cents per bushel; and the cost of raising the ore $1 50 per ton.

The principal part of this company's works is on the Pacolet, where they have a blast furnace, bloomery and puddling furnaces, rolling mills, and a nail factory in operation. The annual product is about 600 tons.

The King's mountain company have a high furnace on King's creek; but their principal works are on Broad river, a mile or two below Cherokee Ford, where they have a high furnace, bloomery, forges, fineries and a rolling mill. In 1840 the cost of pigs was $18 per ton made with 290 bushels of charcoal.

The Cherokee manufacturing company's works are situated on the right bank of Broad river, at Cherokee Ford, and consist of four high furnaces, with fineries, puddling furnaces and rolling mills in proportion, together with an extensive nail factory. No expense has been spared in rendering this establishment complete, so far as the works are concerned. The workshops are spacious and well constructed. About 900 tons of iron are the annual product of these works, and the consumption of charcoal 260 bushels per ton. Charcoal is delivered at the furnace at four cents a bushel."

Though some of these statements are altogether unintelligible, they are the only data I have yet obtained for this region. The reader will be left in doubt probably as to the number of furnaces belonging to the S. Carolina manufacturing company; and whether the annual product of their works is 600 tons of pig iron, or refined iron, or nails.—And so of the 900 tons of iron annually produced by the Cherokee manufacturing company. If this be pig iron, there must be a mistake about the *four* high furnaces, stated in the same paragraph to belong to this company, for this is the yield of only one.

Enough was published, however, to show that the business is conducted with small results and a considerable waste of stock. Still from the cheapness of materials the cost of this pig iron, which is made at all these furnaces with cold blast, and is likely for this reason to be of superior quality, does not probably differ essentially from the estimate given of $18 per ton.

The annual production for the State, estimated from the foregoing data, may be put, till corrected, at 6,000 tons. H.

The last number of the Cincinnati Price Current has a long article on cotton factories in the west, from which we make the following extracts.

To an English cotton manufacturer, 100,000 spindles in the extended territory bordering the Ohio river, may seem an insignificant matter, yet it will be borne in mind that these are but the germ of the tree.

We pretend not to fix the point of time when the chief seat of the cotton manufacture will be in the valley of the Mississippi; but that it must be there eventually no one can question:

WESTERN MANUFACTURES.

The ruling prices of cotton, for a series of years preceding the present, were exceedingly low, even when compared with other leading staples of the country. As a consequence, the cotton planters, and those who depended on the market for hemp, stock, food, &c., in the plantation States, have become conscious of the necessity of diversifying their pursuits and encouraging home manufactures. Cotton mills have been springing up at various positions in the south and west; and now, at favorable positions, such as Graniteville, S.C., Augusta, Ga., and Cannelton, Ind., systematic efforts are being made to lay the foundations of manufacturing cities. Indeed we are now taking precisely the same steps that England, Belgium, and New England have already taken—the same causes that have built Manchester, Birmingham, Ebberfield, Lowell, &c., are now operating in this valley, and with immense power, and if our cities, when surrounded by a sparse population, and only required for the purposes of factorage, grew up with unexampled rapidity, what may we not expect when our clothes, hardware, &c., are made at home. One of our merchants can sell the product of the constant labor of a thousand manufacturers. We shall not lose the merchant, but we shall attract the thousand manufacturers. Our expanding markets, peaceful and serene government, light taxes, abundant food, cheap materials, and genial climate, wonderful facilities of intercommunication, are all combining to make the central section of this valley the chief seat of manufactories in the world.—We now control the commerce of cotton, and our exports of cotton will average, in value, over forty millions of dollars yearly. When we export (as we soon shall) cotton yarns and cloth, instead of raw cotton, the value of these exports will average yearly over 200 millions dollars.

It is, however, argued that the cheap labor and capital of olden countries will enable them to retain their monopoly of the cotton manufacture.

The same arguments were used when England began to receive the weavers of Flanders, when Slater was erecting his cotton frames in R. Island, and lighter taxes and cheaper food in Belgium, Saxony, and Switzerland were attracting cotton machinery from England. We seem to forget that *natural* forces will always prove more potent than *artificial* forces; that men and money are more easily moved than iron, cotton and food, and that the former need be moved but once, while the cost of moving the latter is perpetual.

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* Report on the Geology of South Carolina, p. 83.

* On the map.
† Report, p. 83.
‡ Probably the square of at the bottom.

Thus, better markets, cheaper food, and greater security to person and property induced the Flemish weavers to emigrate to England. The abundant iron and coal of Great Britain were natural advantages that enabled her to defy all manufacturing opposition for more than a century, even while engaged in wars over the world, and while increasing her national debt to a sum almost beyond computation. But, when her population passed the practical limit of a home supply of food, and was pressed down with taxes, Belgium, Saxony, and Prussia opened their mines of coal and iron, and as soon as they could copy British machinery, successfully entered the field of competition, and had it not been for recent revolutions, and the insecurity of property on the continent, Havre, Amsterdam, and the Haus towns would now divide with England the imports of our great staple.

The growth of the cotton manufacture in New England was the result of a superabundant population; of higher taxes; of convenient and abundant water power, which, in the infancy of steam power, had a decided advantage, and of greater proximity to the material and our home market. Compare it with our own, these advantages do not now exist in New England. The power of steam is now, where coal can be had at 10 cents the bushel, cheaper than that of water. The steam engine now does far more work and with a much less expenditure of fuel, than it did ten or twenty years ago. There is now a large deficiency of food in New England, and her sterile land has now reached such prices that labor must be driven from it, if it can find as eligible and cheaper positions of employment elsewhere.

We have every element that enters cotton cloth, and at average prices far cheaper than elsewhere. Our iron ores for machinery, and coals for power, are equal in quality and greater in quantity than those of England or of Belgium, and at one-fifth their cost in labor. Cotton is within two day's journey—subsistence is found in the utmost profusion around us. Our great natural and ever open highways afford us the cheapest possible facilities of intercommunication. Our climate is most favorable to life and to labor. Our taxes are lighter, by far, than those of any other people. We have, and our position will always secure to us, the greatest possible security to persons and property. We have now a population superabundant for the supply of our agricultural wants; and now, when we are fully prepared to develope our mineral manufacturing resources, and to enlarge those branches of industry that have been regarded as the chief sources of wealth and the evidences of high civilization, the newly discovered mines of gold on the shores of the Pacific, are not only providing us with the means of manufacturing action, but are opening nearer channels of communication between ourselves and people of other countries, climates and products, and with whom we should naturally make exchanges.

In Cincinnati, Covington and Newport, there are five factories, viz: Franklin Mill, of Harkness, Fosdick & Strader; Pearce, Gould & Co.; J. C. Giesendorff; Covington Cotton Factory, and Newport Cotton Factory.

The Franklin Factory has 10,000 spindles; 220 looms; manufactures 42,000 yards of brown sheeting weekly; consumes 1800 bales of cotton per year, and employs daily 250 hands; steam power.

Gould, Pearce & co., 2500 spindles and 32 looms; produces 300,000 yards of sheeting per annum, and 150,000 pounds cotton yarn; consumes 600 to 700 bales of cotton yearly, and employs daily 60 hands; steam and water power.

O'Shaughnessy & Co., 3000 spindles; manufactures 13,500 yards 4-4 brown sheeting and 2000 lbs. cotton yarns per week; consumes 900 bales of cotton per year; employs daily 75 hands; steam power.

Covington Cotton Factory, R. Buchanan, agent; 2600 spindles; makes yarns only; consumes 950 bales of cotton per annum; employs about 90 hands; steam power.

J. C. Giesendorff, 1000 spindles; produces 5000 lbs. yarns, wick and batting, per week; consumes 500 bales of cotton yearly, and employs 30 hands; water and steam power.

The above spindles are all in operation, and in addition to these Messrs. O'Shaughnessey & co. intend to increase their number from 3000 to 6000; and Mr. Giesendorff, who has just removed his machinery into a new building, purposes adding to the number of spindles from time to time, until it is increased to 6 a 7000.

The Cooper Cotton Factory, Dayton, 2300 spindles; produces yarns; consumes 900 bales of cotton annually, and employs about 80 hands; water power.

Castalia Manufacturing Company, Castalia, Ohio; 1700 spindles, 48 looms; 1200 to 1400 yards heavy brown sheetings made per day; consumes 312 bales of cotton annually; employs 35 to 40 hands.

Springfield Cotton Mill, Springfield, O.; 500 spindles; produces 90,000 lbs. yarns, carpet warp, and batting, and consumes 200 bales of cotton annually; employs about 20 hands.

Maysville, Ky., Cotton Mill, A. M. January & Co.: runs 3700 spindles; produces cotton yarns only; consumes 1000 to 1200 bales cotton per annum; employs 85 to 100 hands; steam power.

Brookville, Ia., J. Woods; runs 1200 spindles; produces 600 lbs yarn per week; employs 30 hands; water power.

Steubenville, Ohio, G. E. & J. W. Warner, runs 4700 spindles; produces 900 yards of brown sheetings and 15,000 lbs. yarns per week; employs 180 to 200 hands.

Zanesville Cotton Mill, Zanesville, Ohio; 1744 spindles; produces 232,500 lbs. yarns, warp and batting per annum; consumes 250,000 lbs. cotton; steam power.

Miamisburgh, Ohio; M. Cassady & Co.; runs 500 spindles; produces 2150 lbs. yarns, batting, etc. per week, and consumes 200 bales of cotton per year; employs 20 hands; water power.

Wellsville, O.; runs 2000 spindles; produces yarns: consumes 750 bales of cotton per year.

Pittsburgh Eagle Factory; 6000 spindles; produces yarns only; consumes 1000 bales of cotton per annum.

Allegheny Factory; 1500 spindles; produces yarns; and consumes 600 bales of cotton per annum.

Penn Mills; 6300 spindles; produces sheetings; consumes 1700 bales of cotton per annum.

Pitt Mills; 5000 spindles; produces sheetings; consumes 1500 bales of cotton per annum.

Star Mills; 4000 spindles; produces sheetings; consumes 1200 bales of cotton per annum.

Wheeling Manufacturing Company; 2000 spindles; produces sheetings; consumes 700 bales of cotton per annum.

Brighton, Pa.; 1000 spindles; produces sheetings, and consumes 400 bales of cotton per year.

Cannelton, Ia.; (now receiving the machinery, and will be in operation about the first of May,) capacity 10,800 spindles; estimated production, 5,000,000 yards of No. 14 brown sheetings per annum.

There are in addition to the above, Mills at Bon Harbor, Lexington, and Paris, Ky., Columbus and Dayton, Ohio, from which we have no statement, but from what we have been able to learn, their combined capacity is about 12,000 spindles.

It is seen by the above that we have in operation in this western valley, *eighty-nine thousand* spindles; and the additions to be made to factories in this city and vicinity, will, in another year, swell the number to near *one hundred thousand!*

Railway Progress.

Continued from page 243.

On scarcely any line of railway are these mechanical conditions to be found. The rails are upbraided and crushed out on their surfaces: they are hammered into notches in their chairs, and are loose therein; and their abutting joints are not of one-fourth the strength to resist deflection that exists in their intermediate portions. The clinking, sound so familiar to the ear of every traveller, like the loose shoe of a horse, is caused by the springing of the rails in the joint-chairs at every fifteen feet distance, and not only destruction thence arises, but retardation of the train. The momentum is momently absorbed by concussion, and fresh steam must be generated to replace it: it is equvalent to starting the train afresh.

It is evident, therefore, that the weight of the rolling stock is in excess of the railway strength. Mr. Stephenson warned the legislature of this three years back. "If you persist in the use of heavy engines, you must reconstruct your railways." The engine tyres are many times the strength of the rails they run on.

There are two mechanical modes of meeting the difficulty. One is, to increase the strength and weight of the rails of the railway; the other, to diminish the weight of the rolling stock.

Against the former—increasing the weight of the rails, Mr. Brunel, who should be skilful in questions of weight, has lifted up his voice in the Institute of Civil Engineers, proclaiming that, in his practice, rails of 60 lbs. to the yard are more durable than those of 85. He says, that no good iron can be obtained in large sizes. Very possible, though that difficulty will not long endure under increasing competition, skill, and industry. The more probable solution is, that the light rail is elastic, and gives and takes better with the longitudinal sleeper to which it is fastened. And it is quite clear that the elastic yielding will have a tendeney to elude abrasion. But this will be at the cost of wasted steam-power, precisely as a horse, in galloping over loose sand, will save the waste and wear of his shoes at a much greater expenditure of wind.

The present rails of the heaviest make are 92 lbs. to the yard, and practical instances exist of their being actually trodden out in nine months by existing traffic. Therefore, to get a durable rail, the weight would require to be at least doubled, and the surface artificially hardened with steel, to resist abrasion. There is yet more than this. The contact of the wheel with the rail is a point, or at most, a line across the rail. The width of the present rails is two inches and a half. To get sufficient surface to prevent crushing, would require probably five inches breadth; and, to produce this, would require iron of at least 300 lbs. per yard.

To support such rails proportionably, would require a range of cross sleepers in close contact with each other, similar to the "corduroy" roads of America.

This would be costly in capital, but supposing the trafic in proportion, warranting the incessant use of monster engines—a stream of passengers and goods not otherwise to be carried—it might be an advisable investment. The use of the monster engines *without* the giant's road, can clearly only be ruinous.

But if, on examination, it appears, that the amount of traffic could be carried over the same rails by merely duplicating or tripling the number of the trains, and thus reducing the weight, it would be commercially the best arrangement. And supposing the traffic still to increase, it would be better to duplicate the number of the rails than to duplicate their strengrh.

In dealing with vessels in water, increase of size is of little disadvantage compared with the advantage, because increase of size gives increase of surface-bearing. But the tread of a wheel on a rail can be very limitedly increased, and only by the breadth of the rail. Practically, the bearing surface is commonly a point.

To determine the weight that may be advantageously placed on a single wheel, we must revert to the powers of iron to resist crushing. From mechanical experiments, it appears that good wrought iron begins to crush under a steady weight of eleven tons to the square inch. Now, the driving wheels of many locomotive engines have ten to eleven tons on a surface of two points, It is evident, therefore, that destructive wear must ensue. Engines of eleven tons weight on two point at forty miles per hour, over unsteady rails, may very well warrant the appellation of *anti-dividenders*. If, therefore, the weight on a pair of driving wheels can be reduced to five tons, the resisting power upon the rails may be in excess of the crushing power of the load, and the way be rendered really "permanent," *i. e.*, permanent in durability and not in expense in maintenance. It is obvious that this is mechanically the most econimical arrangement, if the mechanical power be competent to the commercial demand. Upon examination, we shall find that, in ordinary traffic, a large portion of the engine power is at present absorbed in carrying dead weight. An engine, a tender, a break-van, one first-class and three second-class carriages, make

up a gross weight of 55 tons on 30 wheels, and afford accommodation for 18 first-class and 96 second-class passengers—total 114.

Net weight of passengers, say	tons	9
Ditto train		55

or more than six tons dead weight to one ton of paying load.

But on the Eastern Counties and the Cork and Bandon lines it has been shown, that with a differently constructed engine and carriage. weighing only 21 tons, on sixteen wheels, 20 first-class, and 96 second-class—total 116, may be conveyed at the same speed, and with a consumption of only one-third as much coke. In this case, the proportion will be

Net weight of passengers, say	tons	9
Ditto train		21

or little more than two tons dead weight to one ton of paying load. The advantages, therefore, in favor of the light system, are—

In non paying weight, as	21	to	55
In passengers	116	„	114
In wheels	16	„	30
In coke	1	„	3
In oil and grease	1	„	3
In outlay of capital	1	„	2
Interest on ditto	1	„	2
Repairs	1	„	2
Depreciation	1	„	2
Maintenance in way	0	„	0

The true plan is to provide for the maximum average, and let the occasional surplus wait till the next time, as was the case with the stage-coaches. A maximum average of 100 might on an occasion reach 1000, but it would be absurd to provide a train for them.

In making future railways—which will again be rife as soon as the final extent of wasted capital in the existing lines is understood—the light system must come largely into operation. The saving of cost in construction of bridges and works for light weights will be very great; and if landholders come to their senses, as they will be fain to do, the probability is that railways will be made, with rolling stock complete for passengers, at about £7,000 per mile of double way. The existing railways must look to it, and set their houses in order. They must write off their wasted capital, and make the most of their goodwill, being the first in the field. There is no improbability in the assumption that Telford's Menai Bridge will yet serve for the transit of light railway trains, in the coming time, when Ireland shall be an integral part of England, and the Hollyhead sea-ferry be worked by the longest iron steam-ships the world can boast, setting fire, wreck, and sea-sickness alike at defiance —practically a moving steam-bridge, as simple as the present passage of the Mersey from Liverpool to Berkenhead, and scarcely more costly to the passengers.

To be continued.

Meteorological

We find in the Boston Traveller an elaborate meteorological table of observations extending thro' a long series of years, from which we make the following selections.

The mean temperature of each month in 1849, in Boston, (lat. 42° 21′,) at the observatorics at Amherst and Cambridge, Mass., and at that at Greenwich, were as follows: Amherst and Cambridge being situated about 75 and 4 miles westerly from us, in latitudes exceeding our own by 1 and 2 minutes only; but that of Greenwich (51° 29′) is more than nine degrees greater:

	Jan.	Feb.	Mar.	Aprl.	May.	June.	July.
Boston	24·62	22·89	38·22	45·39	53·65	67·57	71·10
Amherst	20·02	18·50	35·37	43·49	53·42	66·88	72·09
Camb'dge.	21·05	18·20	35·80	43·50	53·00	67·60	71·60
Greenwch.	40·10	43·2	42·5	43·2	54·0	57·9	62·1

	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Boston	69·32	62·17	51·27	47·60	31·67	48·93
Amherst	68·85	60·05	47·03	44·08	28·40	46·65
Camb'dge.	69·20	60·00	49·20	45·00	28·90	47·04
Greenwch.	62·9	58·8	51·1	44·1	39·1	49·92

The quantity of rain, including melted snow, was as follows, in inches:

	Jan.	Feb.	Mar.	Aprl.	May.	June.	July.
Amherst	0·99	0·99	4·21	2·24	3·61	1·53	2·25
Camb'dge.	0.72	1·46	6·90	1·24	2·76	1·37	1·17
Greenwch.	1·59	2·20	0·45	2·20	3·90	0·20	2·90

	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Amherst	7·86	1·40	6·36	3·65	3·36	48·45
Camb'dge.	6·52	2·13	7·56	5·43	3·78	41·04
Greenwch.	0·45	3·30	2·72	1·55	2·40	23·84

The mean temperature of each month during the last *nine* years, at Boston, Cambridge and Greenwich, was as follows:

	Jan.	Feb.	Mar.	Aprl.	May.	June.	July.
Boston	29·05	27·11	36·16	46·56	56·29	66·78	71·67
Camb'dge.	25·57	23·63	33·70	44·91	54·79	65·50	71·07
Greenwch.	37·48	38·43	42·37	46·72	54·35	59·63	61·51

	Aug.	Sep.	Oct.	Nov.	Dec.	Year.
Boston	70·03	62·98	51·05	41·95	31·88	49·43
Camb'dge.	69·10	61·28	48·35	39·18	29·47	47·32
Greenwch.	61·08	57·06	49·78	44·43	40·32	49·43

The average quantity of rain in each month, at Cambridge, during the last six years, and at Greenwich during the last nine, was as follows:

	Jan.	Feb.	Mar.	Aprl.	May.	June.	July.
Camb'dge.	2·89	2·72	4·02	1·65	3·43	2·88	2·74
Greenwch.	1·81	1·74	1·50	1·63	1·98	1·60	2·31

	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Camb'dge.	3·91	3·82	4·07	4·34	4·60	41·96	inch.
Greenwch.	2·62	2·32	3·38	2·53	1·56	25·03	

At Cambridge the greatest quantity falls in December; the least in April.

At Greenwich the greatest quantity falls in October; the least in March.

Greatest quanty in any month at Cambridge, in 6 years, Nov. 1846, 10·43 inches.

Least quantity in any month at Cambridge, in 6 years, Jan. 1849, 0·72 inches.

Greatest quantity in any month at Greenwich, in 9 years, Oct. 1841, 6·0 inches.

Least quantity in any month at Greenwich, in 9 years, June 1849, 0·2 inches.

The mean temperature of each of the last nine years was as follows, viz:

	1841.	1842.	1843.	1844	1845.
Boston	48·81	49·65	48·33	49·00	50·06
Cambridge.	46·53	46·79	45·30	46·04	49·06
Greenwich.	48·64	49·59	49·38	48·63	47·58

	1346.	1847.	1848.	1849	Mean.
Boston	50·28	49·98	49·70	48·93	49·43
Cambridge.	49·06	47·76	47·92	47·04	47·32
Greenwich.	51·26	49·63	50·23	49·92	49·43

In the course of the nine years the thermometer was—

Boston.

Highest	June 30, 1841	97
Lowest	Jan. 30, 1844 / Jan. 11, 1848	—2¼
Range		99¼

Cambridge.

Highest	July 12, 1845	100
Lowest	Jan. 5, 1841	15
Range		115

Greenwich.

Highest	July, 1846	92½
Lowest	Jan., 1841	4
Range		88½

The following table contains the mean temperature in Boston the last twenty-five years:

1825	51·33	1837	46·63
1826	50·30	1838	48·51
1827	48·75	1839	49·46
1828	51·79	1840	49.49
1829	48·43	1841	48·81
1830	50·08	1842	49·65
1831	49·17	1843	48·33
1832	48·28	1844	49·00
1833	48·41	1845	50·06
1834	48·23	1846	50·28
1835	47·52	1847	49·98
1836	45·85	1848	49·70
		1849	48·93

	Jan.	Feb.	Mar.	Aprl.	May.	June.	July.
Warmest	34·51	37·60	41·64	50·73	63·19	70·50	76·43
Coldest	19·87	19·84	29·05	41·38	53·03	60·12	67·81
Difference	14·64	17·76	12·59	9·35	10·16	10·38	8·62

	Aug.	Sep.	Oct.	Nov.	Dec.	Year.
Warmest	72·84	68·14	54·41	47·69	38·31	51·79
Coldest	65·56	58·48	46·40	35·37	18·09	45·85
Difference	7·28	9·66	8·01	12·32	20·22	5·94

	Jan.	Feb.	Mar.	Aprl.	May.	June.	July.
First 13 ys.	26·82	27·94	36·15	46·30	56·86	65·68	71·20
Last 12 ys.	28·61	27·38	36·35	46·67	56·40	66·74	72·12
Mean of 25 yrs.	27·68	27·68	36·24	46·47	56·64	66·19	71·64
Ther. highest	62	64½	73	84	96	97	99½
Ther. lowest	—10	—10	—5	17½	29	38½	52
Range	72	74½	78	66½	67	58½	47½

	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
First 13 ys.	68·85	61·71	51·76	40·72	31·03	48·83
Last 12 ys.	70·21	62·78	51·07	41·07	31·28	49·35
Mean of 25 ys.	69·51	62·23	51·43	40·89	31·09	49·08
Ther. highest	94½	94	88	71½	67½	
Ther. lowest	48	34½	25½	5½	—10¼	
Range	46½	59½	62½	66	78½	

July, 1825, [76·43] was the hottest, and December, 1831, [18·09] was the coldest month—difference 58·34.

The greatest difference between any two consecutive months was 22·09, in Nov. and Dec., 1831.

The two mildest winters of the series were those of 1827-8 and 1841-2.

The two coldest winters of the series were those of 1835-6 and 1836-7.

The two coldest summers followed the two coldest winters. They were those of 1836 and 1837; summers in which Indian corn did not ripen in Massachusetts. The winter of 1835-6 was said to have been the coldest since that of 1780. Long Island Sound was closed about six weeks, and in the county of Berkshire, large numbers of the *native* forest trees were destroyed. In these years [1836-7] as well as in 1816, in which it is said there was a frost in every month, as far south as Virginia, the spots on the sun were very numerous, and so large as easily to be seen through a plain dark glass. In the winter of 1827-8, the mildest in the series, the Hudson was not closed, the only instance in the 25 years.

A NEW MODE OF TRANSPORTING SHIPS ACROSS THE ISTHMUS.

Mr. John Wilkins, Civil Engineer, has submitted to the public a plan for transporting loaded ships from the Atlantic to the Pacific upon a railway.—We copy the following from his plan showing the manner in which he proposes to place the ship upon the car and deliver it again into the water:

In estimating the cost, I have therefore taken the rails at 150 pounds per yard, and for two rails with chairs and fixings the whole weight of iron per mile would be about 260 tons. I propose one track only, composed as usual of two rails (with turnouts, if the amount of traffic should require them.) The guage between the rails will be 16 feet, requiring a graded road face of 22 feet. The car wheels will be of 32 inches diameter, and set on the car at 33 inches from centre to centre. Twelve of these wheels—3 pair in front, and 3 behind—will have flanges and be connected with their opposite wheels by common axletrees. The remaining 108 wheels—(54 on each side)—will have no flange and no axletree or other direct collateral connection across the car. They will be connected in pairs or sets of 3 or 4 consecutively, and each set so connected will have a separate and independent spring connection with the body of the car, and each spring will have a range of elasticity from 40 to 100 tons, capable of adjustment to any degree required. The bearings of each wheel will be on both sides of the wheel, and of eqnal length on each side, thus ensuring a balance pressure, and to secure the concentricity of the journals and periphery, both will be turned on one centre.

The whole range of rail covered by each line of 60 wheels will be 165 feet. The body of the car would thus be long enough for a ship of 190 feet keel which is quite sufficient for the proposed amount of tonnage.

The flange wheels being only the six pairs on the front and back, the car will be able with ease to turn sharp curves on plate rails and to enter turnouts if required. The body of the car on which the ship will rest during transit will be composed of two main side walls on longitudinal string pieces of timber or wrought iron capping the two lines of wheels. Along the top surface of these two side walls, for the space of 50 or 60 feet on the central section of their length, will be permanently fixed two spring cushions or elastic beds, having a deep range of elastic action, so as to be capable of forming spontaneous adjustment to the varying forms of the floor timbers of ships near the midship sections. The remaining portion of the tops of the side walls of the car, before and behind the above-named stationary cushion, will be divided, each length of 50 or 60 feet, into 3 or more sections. Each of the sections will have an independent cushion or spring bed, like the main midship cushions in composition and elastic range, but differing from them in being attached to a frame capable of rising or falling to or from the bottom of the ship as its particular from opposite that spring may require. These several spring frames will receive their motion and adjustment from sliding screws, operated on by nuts and turning rods. The elasticity of the cushions can be entirely destroyed in a moment, and may remain out of action while the screwing up or adjustment of the spring bed to the peculiar form of each ship takes place. The power of one man will thus be made sufficient for the process of fitting the ship to the truck. The elastic force of all the cushions can then be instantly restored and made to press with any desired strength on the bottom of the ship. The nuts of the adjusting screws will have to be worked while 10 or 15 feet under water, a guide cord on the nut and perforated turning rod, is therefore used to prevent delay. In the middle of the cross section of the car on the extreme front and back ends there will be fixed two expanding jaws or forks made to embrace the dead wood and gripe of the ship. By the guiding action of these forks when the ship begins to settle down over the car, the keel will spontaneously settle on the middle line between the side walls of the car, thus ensuring by a self-acting process perpendicularity and equalization of weight on each side, without any assistance from the dock-keepers or ship's crew.

It is now to be observed that the ship railway will terminate at each shore in the bottom of the entrance dock. This dock may be ither a full lift dock with gates at each end, and the rails altogether on the level, or the lift of the dock may be limited to 5 or 6 feet, and the remaining rise to the leading level of the railway be attained by incline.—The decision of this point would be a question of cost resting on definite survey of the locality. One plan has no material advantage over the other in point of accommodation.

As soon as the ship car has entered the dock, the inland gates are closed, the dock flooded and the sea gates opened, and the ship intending to take passage is then floated over the car. A portion of the water is then gradually let out of the dock, until the sinking of the water on the ship's sides shows that she has settled on the two main cushions of the car. As soon as a small pressure of 150 to 200 tons is found by the abatement on the ship's sides to take effect on the two main cushions, the further escape of the dock water is then suspended, until all the fore and aft adjusting cushions have been screwed home on both sides and all their elasticity restored. All the remaining water is then let out of the dock, the inland gates are opened, and the locomotive power is then to be attached to the car, when the ship proceeds along the line in the same way as any other train would do, except that during a fair wind no locomotive is required, as the wind would produce greater speed on all ordinary grades of railway than it could produce on the same ship in water.

This novel plan is sustained by a long argument in which the various objections that naturally suggest themselves are met; and we think successfully disposed of. We have only room for such portions of the article as give a general idea of the mode by which the ship is to be received on the car and taken across the isthmus.

This plan may strike people on the outset as of impossible execution; but we think that their objections are due rather to its novelty than to any real difficulty in the way. A road of sufficient strength can easily be built. So can a car of sufficient strength and dimensions be constructed. The ship can be easily mounted on this car, and can be so supported as not to be subjected to injurious strains. What objection is there then but the magnitude of the work. It does not appear half so difficult of accomplishment as have many schemes in the outset, but which have been successfully realized. Could a loaded ship be safely transported across the isthmus, a new face would be put upon the commercial affairs of the world.

Tennessee.

East Tennessee, April 17, 1850.

Editor Railroad Journal—

Dear Sir—Enclosed I send you the following statement of the condition and prospects of the East Tennessee and Georgia railroad, which, if you deem of sufficient importance please insert in the Railroad Journal.

EAST TENNESSEE AND GEORGIA RAILROAD.

The contract for the construction and equipment of this road, from its junction with the Western and Atlantic railroad at Dalton, Geo., to Knoxville, Tenn., recently held by Gen. Duff Green, has, by an arrangement mutually satisfactory to him and to the board of directors, been rescinded. To Gen. Green's energy and public spirit is mainly attributable the revival of this most important work, after a ten years' state of inactivity; and it is gratifying to learn that he has realized a very handsome profit by the operation. He retires from this contract to engage in other enterprises equally important, and it is to be hoped in their result they may prove equally profitable to him.

The company have assumed the subcontracts made by Gen. Green, and are rapidly progressing with the grading and the delivery of timber as far as Charleston on the Hiwassie river, a distance of 40 miles from the southern terminus at Dalton, and this portion of the road will be in readiness for the track as soon as the 1st of July.

By an act passed at the last session of the Legislature of Tennessee, the State has offered a loan to the company of $350,000, to be expended exclusively in the purchase of rails and equipment for the road. Dr. J. G. M. Ramsay of Knoxville, has been appointed agent on the part of the State, and Hon. A. P. Keys, of Athens, the President, on the part of the company, to make the purchase in compliance with the terms of the act. The board have adopted the T rail, to weigh not less than 100 tons to the mile, equal to nearly 64 pounds per yard. Mr. M. B. Prichard, of Massachusetts, an engineer of much experience, has been unanimously confirmed by the directors as the Chief Engineer of the road.

The company, being relieved from the embarrassment caused by Gen. Green's contract, and also able to avail themselves of the proffered aid of the State, can now offer their stock with as good a showing of prospective profits as can be presented by any road in the United States.

The present company are successors to the Hiwassie railroad company, which commenced operations on the road in 1838, under the expectation and assurance that Georgia would continue her line of railroads to the State line; but the Georgia enterprise having failed, this road also stopped, but not until some $900,000 had been expended upon the grading, the State of Tennessee and individuals each holding one half of the stock. As the work was done at high prices, and in order to induce further subscriptions to complete the road, the Georgia road by this time having reached Dalton, a point but 15 miles from the State line, in 1848, the East Tennessee and Georgia railroad company was formed, and all the old stock was exchanged for new, at the rate of a share of old for one of new.—The following statement shows the present position of the company:—

Stock held by the State of Tennessee in lieu of $450,000 Hiwassie stock	$225,000
Stock held by individuals in lieu of $450,000 Hiwassie stock	225,000
Stock recently issued to the state in lieu of 5 per cent bonds	70,000
Stock recently issued to individuals	70,000
Total stock now out	$590,000
Add to this debt of company say	40,000
Total cost of road thus far	$630,000

For this sum the company have upwards of 80 miles of road graded in a very superior manner, and most of it for a double track, and a very superior bridge of 3 spans across the Hiwassie river, so arranged as to be used as a toll bridge as well as for the railroad; and also, the timber for the superstructure delivered on upwards of 20 miles. The completion and equipment of the road to Knoxville at the Engineer's estimate is $1,150,000.

Of this sum the company have an unpaid subscription from the state of $129,000, payable in five per cent. bonds, worth a 85, say	$110,000	
Individual subscriution say	20,000	
State loan $350,000, 6 per cent Coupon bonds worth a 1.04	364,000	$494,000
Leaving to be subscribed for but		$656,000
And making the whole cost of the road 110 miles		$1,780,000

which is equal to but $16,000 per mile for a first class road with a heavy T rail, and fully equipped. As to the magnitude of the prospective business of the road, no one who has ever travelled through the beautiful valley of Western Virginia and East Tennessee, can doubt. This valley runs in a northeasterly direction parallel with the coast and the Blue Ridge, and lies between the Blue Ridge and main Alleghany chain, and is about 130 miles in width. The surface is gently undulating and the soil exceedingly productive; but on account of its being completely shut out from a market, by reason of the chains of mountains between it on the one side, and the Mississippi valley on the other, the farmers have not been able to accumulate much wealth, nor is there much money in the country.—The principal articles of export have been horses, mules, cattle and hogs, immense droves of which are annually taken many hundred miles at great expense to Eastern Virginia, and to Georgia and South Carolina. It is far within the truth to assume that the average width of the rich wheat or corn lands (fully equal for wheat to the lands of Western New York) is 20 miles, and that with the road to Knoxville at least 150 miles in length, will be directly tributary to it, this will give 2,000,000 acres, which, if all cultivated in corn, and counting but 30 bushels to the acre, will yield 60,000,000 bushel, say but half of this should be transported on the railroad, leaving the rest to be converted in-

to beef, pork, horses, mules, etc., all of which are in their turn to take the road, we shall then have 6,000,000, which, at say 7 cts. will give $420,000 to the road; and as the cost of transportation to the seaboard, (Charleston, S. C., or Savannah) will be less than from any other cheap grain-growing portion of the United States, the distance by railroad being under 500 miles, there can be no doubt that even a much larger amount of grain will be annually taken over the road, to say nothing of the almost innumerable other articles of freight for the southern market, the travel and transaction of this business will produce, and perhaps the equally large amount of up freight, necessary to supply the wants of at least 500,000 inhabitants, must make this road one of the best stock paying roads in the country. In addition to the products of the soil, the mountains and spurs are filled with iron ore of the best description, also bituminous coal and copper and lead ores in great abundance, many of which are now being extensively worked. The iron on account of its superior quality commands in the Pittsburgh market the highest price, and large quantities are annually sent round by the Tennessee and Ohio rivers, a distance of over 2500 miles. Running through the valley are numerous large streams, which will furnish water power sufficient to manufacture flour, cotton, iron etc.—The mountains are covered with a very fine growth of every variety of timber. Charcoal is manufactured and sent to the foundries for three cents per bushel.

Business sufficient to pay a large dividend may be safely calculated on as soon as the road reaches the Hiwassie river, 40 miles from Dalton, for then it must command the whole trade, by means of the small steamboats that now navigate the Tennessee river, for by running up the Hiwassie 15 miles the navigation being equally good, they will be as near Dalton as if they had passed down the Tennessee to Chattanooga, the point at which the Western and Atlantic railroad strikes the river; but as the bridge is built and the road graded 40 miles beyond the Hiwassie to the Tennessee it is not expected that the road will stop for any length of time at that point; it is therefore apparent that the construction of the road is warranted by the business of the country through which it passes. But it is not to stop at Knoxville; it is a most important link in the great southwestern chain of railroads from New York, or rather Portland, Maine, to New Orleans. The northern connections are now being rapidly built through Virginia, and the East Tennessee and Virginia company are now making vigorous preparations for the commencement of work on this road. The southern connections are also in a state of progress, and it is probable that in less than five years, this valley, hitherto so little known, will be one of the greatest thoroughfares in the United States, the distance between New York and New Orleans being shorter by several hundred miles than by any other route upon which a railroad can be built. As the country is rich in everything but money, the company will have to depend to a certain extent upon legislative and foreign aid and an effort will be made to induce capitalists in the cities to subscribe to the stock. P.

Britannia Bridge.

The English papers are filled with accounts of the opening of this magnificent structure. The following are some of the experiments made to test the strength of the bridge.

The second experimental convoy that went thro' consisted of 24 heavily laden wagons filled with huge blocks of Brymbo coal, in all, engines included, an aggregate weight of 300 tons. This was drawn deliberately through, at the rate of from 8 to 10 miles an hour, the steam working at quarter power. A breathless silence pervaded until the train came out with colors flying, on the other side of the tube, when loud acclamations arose, followed at intervals by the rattling of artillery down the straits. Upon the return, which occupied about 7 minutes, similar demonstrations ensued, and during the progress of the train, those who were appointed to ascertain any possible vibrations, reported they could detect no sensible deflection.

An ordeal stronger still was then resorted to; a train of 200 tons of coal was allowed to rest with all its weight, for two hours, in the centre of the Carnarvenshire tube, and at the end of the time, on the load being removed, it was found to have caused a deflection of only four-tenths of an inch. It is calculated that the whole bridge might with safety and without injury to itself be deflected to the extent of 13 inches. These loads, it is most material to remember, are immensely more than the bridge will ever be called upon to bear in the ordinary run of traffic, though the engineers are of opinion that it would support with ease, and without much show of deflection, a dead weight on its centre of 1000 tons.

Virginia.

The following is a statement of the amount of liability incurred by Virginia in aid of works of internal improvements, at the last session of its Legislature, and the nature of work so aided:

	State acc't.	Joint stock principle. Amount of state subscription.	Guaranteed bonds.
Completion of James river and Kanawha Co. canal from Lynchburgh to Buchanan...	$110,000		
James river and Kanawha company extension from Buchanan to Covington.....			360,000
Richmond and Danville railroad.....			200,000
Southside road (bonds of Petersburgh.....			323,500
Louisa railroad from Richmond to Junction			100,000
Louisa railroad to Covington.....		420,000	
North river Navigation company.....		60,000	
Hazel river Navigation company.....		45,000	
Turnpikes, plank roads etc.....	134,900	577,425	
	244,900	1,102,425	983,500
	1,102,425		
	983,500		
	$2,330,825		

Maryland.

Baltimore and Ohio Railroad.—We are informed that the recent call for proposals for an additional section of the Baltimore and Ohio Railroad embraces the remainder of the entire line to the western terminus, excepting only the part which awaits the issue of whatever action may grow out of the controversy with Wheeling respecting the routes by Grave Creek and Fish Creek. This question must be decided, at latest, by the first of October next, under the provisions of the act of Virginia just passed with a view to its speedy determination. Whatever may be the decision, we are assured that the work cannot be greatly delayed thereby, and that if the line heretofore adopted by the Company be sustained, the whole road will be opened in the summer of 1852. Upon the most difficult parts of the route, occurring in the crossing of the mountains, and which were placed under contract last year, the work has advanced well through the winter, notwithstanding its severity in that region, and during the ensuing season it will be urged forward with increased rapidity. The iron for the whole line has been contracted for upon highly favorable terms, and the first ship load is daily expected. The delivery of the other materials for the track has already commenced. Steps are being taken to provide all the necessary machinery for the new road, and, in short every department of the work exhibits commendable activity. The emulation excited among other enterprises is the best evidences of this. We see Philadelphia hurrying forward to reach Pittsburg, and New York to reach Dunkirk, if they can, before we get to Wheeling; and we see Ohio and the States north and west of her, and indeed the whole Mississippi valley, stimulated to the highest enthusiasm in the railway race by that which is now running between the Atlantic cities. The interest of the contest must increase as it draws to a close, and we are therefore prepared to see Baltimore manifesting that increasing interest in the earnest and effectual manner which becomes an occasion so momentous to her prosperity.—*Balt. Amer.*

Immense Coal Field.

The Somerset Post contains the following notice of the immense coal beds of Perry county, Ohio:

"Near Straitville. in Salt-lick township, in this county, there is a bed of coal which is probably the largest in the world, which has been computed by competent judges, to be abont 128 feet in thickness. We have visited it several times, and we know from observation that it exceeds even the most extravagant idea we could have formed of a coal bank, without travelling out of all reason—The coal strata exhibits a bold front of about 27 feet from the abrupt portion of the hill."

"The idea is prevalent in some places where the fame of this bank has spread, that the strata of coal have, by some convulsions of nature, been thrust into a perpendicular direction. This, however, is not the case. The strata remain in a horizontal position, and there is no more evidence of a freak in nature about this bed than is usually found about coal beds."

Canada.

Population of Montreal.—The following is a comparative statement of the inhabitants of the city of Montreal, in the years 1844 and 1850:

	1844.	1850.
Natives of England	3,161	2,666
" Ireland	9,595	10,007
" Scotland	2,712	2,383
" Canada—French	19,041	21,300
" " British	8,863	10,465
" Other places	212	749
" United States	701	637
Total	44,285	48,207

Population of Quebec.—The recent census gives 37,365 as the number of inhabitants of Quebec.

Natives of England	1,148
" Ireland	6,182
" Scotland	630
French Canadians	22,375
British Canadians	6,776
Natives of Germany	48
" United States	56
" Other countries	149
	37,365
Population in 1844	35,673
Increase	1,692

Toronto and Lake Huron Railroad.—The Toronto correspondent of the Montreal Courier writes as follows:

"The prospects of the Toronto and Lake Huron railroad are much brighter than at any previous period. Messrs. Wood & Co., contractors for the Montreal and Portland railroad, have proposed to build the road at $25,000 per mile, including cars, engines, station houses, and all the necessary 'fixings.' They offer to give security to have the road completed by the first January, 1852, provided the city of Toronto and the County Municipal Council take £150,000 in stock, and £350,000 in tickets be secured in payment. Messrs. Benedict & Co. have also made some proposal; and a joint proposal has been made by these two companies. The

city corporation have had the matter under consideration, and a select committee has been appointed to take it into full consideration. There is a probability that the Simcoe Municipal Council will subscribe its share of the stock."

We have frequently spoken of this projected work, and the excellence of the line for a railroad enterprise. The plan of having corporations subscribe stock in railroads, in which they are interested, is getting to be of almost universal practice in the United States; and it is at once the most effectual and equitable mode of raising the money—as the security thus given is perfect, and all are called upon to bear the burden in proportion as they are benefitted. We hope this project will succeed.

Tennessee.

The City of Memphis, by a popular vote of 706 to 194 against, have decided to subscribe $500,000 to the Memphis and Charleston Railroad, which contemplates the connection of Memphis with the Nashville and Chattanooga Road. The Memphis Eagle notices the vote and remarks:

"We congratutate our friends here and elsewhere, upon this cheering evidence of the warm interest in behalf of the Memphis and Charleston Railroad, felt by the citizens of Memphis. Our friends in Alabama, Mississippi, and Tennessee, must now join us in pushing the good work forward. The right spirit is abroad, and it should be encouraged, strengthened, increased, by vigorous and unceasing labors. How soon shall the cars be upon the track, friends? If you come up to the work with manly will, in four or five years freighted cars, in the iron grip of the steam car, will pass and repass between Memphis and Charleston."

Indiana.

Lawrenceville and Upper Mississippi Railroad.—This road was first chartered in 1848, and was designed to connect Lawrenceburgh and Rushville, a distance of 50 miles. Under the first charter but little was accomplished. Subsequently, at the session of the Legislature of 1848-9 the company was authorised to extend their road west from Greensburgh by way of Melford, Edinburgh and Martinsville, to the west line of the State, and renewed and successful efforts were made to obtain subscription to its stock. The city of Lawrenceburgh subscribed $40,000, and the county of Decater $100,000. Further subscriptions to the stock were made by individuals, and on the 13th August last the first division, embracing 17½ miles from Lawrenceburgh to the head of Tanners' creek, was put under contract.

At the last session of the Legislature this company was authorised to construct a branch from Milford to Columbus, on the Madison road, and another branch from Greensburgh to Shelbyville; and from thence, in conjunction with the Shelbyville and Rushville company, to extend it to Indianapolis. By this last act the name of the road was changed from the "Rushville and Lawrenceburgh" to the "Lawrenceburgh and Upper Mississippi railroad." The company propose in the first place to build the railroad from Lawrenceburgh to the Madison and Indianapolis at Edinburgh, a distance of about 68½ miles. The ultimate destination of the main line is Terre Haute by way of Martinsville for the purpose of uniting with the projected road from that point to the Mississippi river. The friends of this road claim that the connection would constitute it the main trunk line of a railroad from Cincinnati to the Mississippi, in preference to a route through the southern part of Indiana.

The following is a statement of the resources now at the command of the company:

Stock subscribed in cash	$85,000
" " real estate	46,000
" " by contractors	12,000
" " by the city of Lawrenceburgh	40,000
" " by the county of Decater	100,000
	$283,000

This work is still in its infancy, and a large amount of additional subscriptions are confidently counted upon.

To complete the first division of 17½ miles will require the following sums viz:

Amount to be expended to complete grading	$56,000
Superstructure and laying track	27,000
Iron	90,000
Depots, furniture, etc.	20,000
Other expenses	10,000
	$203,000

The means applicable to this division are as follows:—

Individual subscriptions	$65,000
Real estate to be sold	30,000
City of Lawrenceburg bonds	24,000
County of Decatur	30,000
Timber for superstructure to be paid for in stock	14,400
	$163,400
Leaving a balance to be provided of	39,000

which, it is believed, can be readily made up by further subscriptions. The balance of the city of Lawrenceburgh and the county of Decatur subscriptions are applicable to other portions of the road.

It is the intention of the company to push forward the construction of this road as rapidly as possible to its junction with the Madison and Indianapolis railroad, for the purpose of opening a communication between the railroads of Indiana and Cincinnati. The first is by far the most difficult division to construct. When the elevated table lands are gained but few obstacles are met with.

The following gentlemen constitute the board of directors:

Geo. H. Dunn,	Dearborn Co., Pres't.
Walter Hayes,	" "
David Nevitt,	" "
Edmund Marshall,	Decatur "
J. E. Hamilton,	" "
J. B. Foley,	" "
A. R. Forsyth,	" "
Thos. Sunman,	Ripley "
Jos. Wenterode,	Shelby "

Railroad Law.

Supreme Judicial Court of Massachusetts—Jordan vs. the Fall River Railroad.

This was an action for lost baggage. The delivery to the railroad and the loss was proved. The trunk lost contained $375 in money besides clothing, etc. The principal question involved was the extent of liability of the defendants for the money in the trunk.

Fletcher, J., delivered the opinion of the Court. The exceptions taken to the ruling of the Court below, as to the liability of the defendants, as common carriers, upon the whole line of road from Boston to Bridgewater, and as to their being responsible for the acts of Fisher, must be overruled. The defendants had made arrangements by which their passengers were transported a part of the distance over the Old Colony railroad, yet, from this arrangement, they were nevertheless responsible for the safe transportion of passengers and their baggage. Fisher must be considered as the agent of the defendants, they having no other person at the depot to take charge of the baggage, at that time, and Fisher having been previously in the habit of taking charge of the baggage of passengers going on the Fall river railroad. The next point presents more difficulty. It is well settled that the carriers of passengers are responsible for their baggage; yet there is a wide field for discussion and adjudication, as to what articles are properly to be denominated baggage. It has been decided, that such articles as are useful for personal convenience and such as are generally used, fall within the meaning of the term, and that a watch and jewelry are such articles. On the other hand, merchandise, and large sums of money taken for transporportation, cannot be classed as baggage. But money, *bona fide*, taken for travelling expenses, and for personal use and convenience, we think may be taken at the risk of the carrier. We cannot say, that a traveller must carry all the funds necessary to defray his expenses, and for his personal use and convenience, about his person. Yet money intended for any other purposes cannot be considered as baggage, for which carriers are responsible. The verdict in this case for the whole amount of money, without reference to the use to which it was to be applied, must be set aside, and a new trial granted. Mr. Wellington for the plaintiff; Mr. Geo. Minot for the defendants.—*Boston Courier.*

Illinois.

Rail Road from Quincy to the Illinois River.

The completion of the Springfield and Meredosia rail road has excited a general interest on the part of the people of Quincy and of those upon the route of the proposed road for its continuation from the Illinois to the Mississippi. For the purpose of ascertaining the character of the route and the cost of the work, a careful survey has been made under the direction of W. P. Whittle and John I. Shipman, Esq., the latter, a gentleman well know to the Engineering profession.

The distance from Meredosia to Quincy is 54·3 miles. The following are the estimates of its cost:

Grubbing, Grading, Culverts, &c. of 54·3 miles	$120,360 65
56 miles of track, including sidings, &c.	335,395 20
	$455.755 85
If to this be added 5 per cent for engineering and contingencies	22,787 79
For turntables, road crossings, &c.	1,750 00
" water stations, wood-sheds and fixtures	1,500 00
" Engines, passenger and freight cars,	45,000 00
Depots, Engine house and work shops	10,000 00
The total cost of the road and equipments, ready for use, will become	$536,793 64

The average cost will then be $9,885.70 per mile.

The line adopted is in part the same upon which the State expended a large amount of money in 1837, and was abandoned from the inability of that state to carry out her scheme of public work. This will save a large sum to the Company, which now proposes to build the road. The proposed road traverses a fine agricultural country, and the coal and wooded tract in Brown county. From these sources and the passenger travel, the Engineers anticipate a large income upon its cost.

Illinois.

Alton and Sangamon Rail Road

We understand that the Engineers of Alton and Sangamon Railroad have completed the surveys for the terminus in this city, and prepared the whole line for graduation twelve miles to Brighton. From Brighton, the location parties will move direct to Carlinville, and also examine a line crossing Macoupin creek below the junction of Coup's creek, which is supposed to offer advantages in some degree commensurate with the increase of

distance. It is believed that, if a crossing of the Macoupin can be found here, so as to admit of a location from Blackman's bridge, in the direction of the road to Carlinville, the flourishing villages of Chesterfield, Franklin, Fayette, and Carrollton, will be induced to concentrate their business at some point North of the Macoupin, and thereby greatly add to the business of the road. In this event an increase of subscription to the stock in that neighborhood might be reasonably expected.—*Alton Telegraph.*

AMERICAN RAILROAD JOURNAL.

Saturday, April 27, 1850.

Massachusetts Railroads.

It is easy to be wise after the event. It is always much easier to point out mistakes in the past, than to foresee them; so we may now with safety say, that for some time past, we have been aware of the causes which have made shipwreck of so many, and seriously impaired the value of most of the Massachusetts railroads. In fact we have not withheld our opinion entirely up to the present time.

Massachusetts, by many years, got the start of all other parts of the country in the construction of railroads, and she presented the most striking example that the world afforded of their influence in the production of wealth. Other portions of the country, with more abundant natural resources, did not feel the importance of artificial ones, and neglected the construction of these works until Massachusetts was covered with them.

The first lines built in that State of course occupied the best routes. These paid a high profit on their cost, and were eminently successful. This led to the construction of numerons other lines.—The high credit of these schemes, gave them command of unlimited means, and the vast expenditure of money required for their construction, amounting for many years to $5,000,000 per annum, stimulated every branch of industry and trade, till a kind of business millenium was the result. Her people grew into a conviction, that in the railroads they had found the true philosopher's stone; that they were sure to pay wherever built, and whatever they might cost. That in addition to paying well, they increased some ten-fold the value of the country they traversed—that they were bound to succeed however managed; and that on the whole, railroads were invented for the express benefit of Massachusetts in general, and Boston in particular: and that they alone were to be benefitted by this newly discovered principle of infinite and unmitigated good.

The first railroads in Massachusetts were projected and built by those leading minds to whom she owes so much of her manufacturing and commercial greatness. But as railroads were bound to succeed, whether or no, these projects were not long confined to this class of men. They became the popular hobby, and every person almost in the community sought to distinguish himself by a scheme that promised the greatest results, and displayed the most magnificent dimensions. The abundance or scarcity of money (paper money, which is a mere credit) depends upon the prevailing sentiment of the community, and so long as everything went well, money could be had in abundance. Men could easily obtain the control of millions who had not the least experience in these pursuits, and who had never given any pledge of fitness for them, by success in any other. In addition to the schemes set afoot by such persons, railroads were found to be excellent opportunities for the employment of sons of capitalists, or for that class of retainers for which a capitalist, as well as a prince must provide; young men of family and station, educated to a profession, who most have an employment and an income suited to their position in society. Scores of such persons boldly launched out upon the sea of business, with a charter of a railroad as their chart, with the credit of a capitalist for their means, and, it is hard to say with what, for a compass.

But it is found to be impossible to make in the long run only about so much profit out of a legitimate business, or to succeed in any kind of business without some fitness for it. In England it is admitted that the want of attending to these inexorable rules has cost that country more than $600,000,000 in her railroads alone. So in Massachusetts. This bright sky of railroad prosperity began to show some clouds. Only an April shower was predicted. But the horizon instead of clearing up grew darker and darker. The income of railroads increased rapidly, but not half so fast as expenses.—The first dividends in railroads were usually declared upon the amount actually *paid up* when the first train ran over the road. The net income upon *this* cost, determined the rate of dividend. But the construction account being never closed, and the roads often not being more than half completed when put in operation, the progress of the work of construction added to this debt every year. When this indebtedness increased beyond the means of the company to manage, it was provided for by the issue of new stock. This increase of stock of course diminished the rate of dividends. and, and stockholders, only when they received a less per cent than formerly, began to inquire into the management of their property.

These inquiries gradually developed their true condition, and railroads as well as railroad securities began to be regarded with disfavor and distrust. Their wants continued, while their ability to supply them grew less and less. In this dilemma, as the patients grew worse, and as all the remedies of those in attendance failed, their friends resorted to a common expedient in Massachusetts, of obtaining the aid of great names, (for after all Massachusetts trusts in great names,) hoping that their influence would exorcise the demon that was preying upon the vitals of their roads. One great financial doctor was detailed to the Vermont Central, another to the Old Colony, etc. This change of attendance seemed to be attended with a good effect. The patients rallied for a time, but gradually sunk into a relapse more hopeless than the first disease. Great names were found impotent to effect a cure where the disease was not imaginary. Here the patients were dying of sheer inanition.—Some roads settled gradually down to their proper level. Others went with a crash that carry every thing with them; and the stockholders are now beginning to find out that it costs a great deal of money to build a road, and a great deal to maintain one, and that the best roads upon the best routes routes will not pay unless they are prudently and skilfully managed. It is only the result that could have suggested and applied the remedy. These remedies cannot reach the past, they only can secure the future. They cannot restore the immense sums wasted, but they will prevent the recurrence of the mismanagement that caused them.

The Massachusetts people have certainly an excellent trait which is developed to a remarkable degree. They never give up beat, nor abandon a project so long as one cent more can be made by putting it in good condition, than by giving it up. In the midst of all their disasters, their only thought is to find out the best course by which they can be repaired. The crisis in the Vermont Central was promptly met, and the road is in possession of sufficient means to place her beyond embarrassment. So with other roads. The stockholders in all the roads are now endeavoring to ascertain the nature and extent of the evil from which their roads are suffering and to apply the proper remedy.

But all things considered, Massachusetts has no reason to complain of her railroads. They have been the instruments which have given her both wealth and greatness; and she can afford to dispense with but a very few of them. Many of them may not pay remunerative dividends, but the public derive from them much greater good than their cost. Some should never have been constructed, at least upon the ground assigned for this. The Northern of New York, a Massachusetts road, is a case in point. It was projected for the purpose of giving to Boston the trade of the West, of making her the export city of western produce. Now this object can never be accomplished. Nature has assigned this privilege to New York, and it can never be wrested from her by artificial means.

The general success of Massachusetts railroads, under every species of management, is a full proof of their great capacity to pay, when well and prudently looked after. What other enterprises would have succeeded half so well with the same capacity and experience brought to their management? Commercial and manufacturing pursuits would not in the same hands, have sustained themselves half so long as have her railroads; and when these last shall come under the charge of suitable persons, and be managed in a legitimate manner, they will fully recover the position which, for want of this, they have lost.

☞ By a typographical error in our last, we are made to say "$5,000,000,000," instead of $5,000,000, as the annual value of railroad iron imported into the United States.

British Provinces.

The people of New Brunswick and Novia Scotia are agitating the construction of Railroad as a means of bringing about a more prosperous state of affairs than exist among them at the present time. We learn from the St. John news, that twenty-five miles of the Railroad to connect St. Andrew's with Woodstock, has been contracted for by an American rail road contractor, who takes in payment one fourth in stock. A thousand men are immediately to be set to work; the cars, &c. have been ordered: the materials for the rails are now on their way to St. Andrew's—and it is expected that the cars will be able to run the first twenty-five miles in the course of the summer. A Rail road is also projected from St. John to Shediac, and we believe that a bill is now before the Provincial Legislature, authorising the Province to take one-half of the stock (£200,000.) It is believed that the balance could be readily obtained in St. John. The construction of this road would have the effect to urge forward a Rail Road through Maine to connect with the above. In such an event the Shediac Rail Road would be extended to Chedabucto bay, the most easterly point in Novia Scotia, which would become the point of embarkation of persons going to Europe. This would materially shorten the time now occupied by a voyage across the Atlantic.

The people of Novia Scotia are also taking measures to build a road from Halifax to Windsor, on the Bay of Funday. The Legislature at its last

sitting, guarranteed that the Province should take one half the stock (we believe £150,000) after the remainder had been subscribed by a private Company. At the public meeting on Friday, the Provincial Secretary proposed that the citizens of Halifax should take £100,000 of the shares remaining. Resolutions were passed, unanimously; and the subscription books have already been put in motion.

We are glad to chronicle the efforts now making in this quarter, to do something to restore the prosperity this section once enjoyed. The projected Railroads, if they can be constructed, will do much to effect this. But railroads can do little compared with the advantagos of free trade with the United States. Nova Scotia and New Brunswick are the last communities on this continent that need rail roads, as almost every man in these Provinces, lives in sight of a ship's mast. They already enjoy the best possible means of transporting their products, but unluckily they have no sufficient market for them. Give for them as a market, the flourishing, commercial and manufacturing towns of the "States," and we should soon cease to hear any further complaints of distress much less of railroads. The causes of these embarrassments and the remedy for them are so plain, we wonder that they are not seen and acknowledged by every person who is suffering from them.

Free Passengers.

We have received a circular signed by John Wilkinson, W. Whittlesey, E. Corning and Thos. Y. Howe, Jr., a committee appointed at a meeting of the representatives of the several companies which compose the central railroad line from Albany to Buffalo, for the purpose of considering the subject of free passes, and of suggesting such a course as shall entirely change the general practice in this respect.

The committee asks the concurrence of the above roads in the following resolution:

"Resolved, That in order to change the practice of granting free tickets upon railroads, which has increased to an extent unfavorable to the business of the company, that on and after the first day of July next no person other than a director of, or one engaged in, the business of this company shall be allowed to pass over its railroad without the payment of the usual fare, and that all persons in the employment of this company are especially charged not to ask or receive a free passage on any other railroad or public conveyance."

Waiving any discussion as to the injurious extent to which free passages may have been granted, we will briefly examine the principles and the propriety upon which the system of free passes is founded.

The granting of free passes on railroads, is in part the interchange of good offices, universally practiced among persons engaged in similar employments or pursuits. As these are mutual, nothing is either gained or lost by the exchange. But as this exchange is not generally concurrent in point of time, the chief idea connected with the giving and receiving a free pass is, that it is an act of courtesy, testifying the good will and respect felt for the person receiving it; and possesses a higher value from these considerations, than from mere pecuniary advantage. Similar courtesies are, we may say, of universal practice among all pursuits and professions; and this fact alone presupposes a good reason for them. They are part of the good offices and courtesies of life, and are based upon a sentiment, the exercise of which gives to life its chief value.

Now how far it is for the interest of railroad companies to absolve themselves from these obligations, or how far it is the duty of railroad directors to limit the objects of such favors, we do not pretend to decide; but we do not believe it is for their interest to discontinue them altogether. Confined within a proper limit they cost but little or nothing, as they balance each other; and they may promote a good feeling beneficial to the best interests of all parties. A person is, rightly regarded, as wanting in his duties who, in society, neglects the courtesies proper to his station. And if every person should do this, we should all become isolated from each other, and man would be brought into a state of universal hostility to his neighbor, instead of being united upon similar objects, for the common good of all.

Another numerous class to whom passes have been given is the public press. Here are no mutuality of pursuits; but passes have been granted upon an implied contract of indebtedness for services rendered to railroads, in carrying out the object of their projectors. With us the construction of a railroad requires the whole strength of the country it traverses. The whole community must be roused to the work.

But how shall every man be reached? By the press. This is the only medium by which the scheme can have universal publicity; and as the press to a great extent moulds and directs the public mind, its influence when arrayed in favor of a railroad project, is most potent. The editor of an influential journal can often effect more for a public work than a dozen leading men in a community. He does this, not by reason of a superiority of talent, but by virtue of his position. No individual or company can now hope to succeed in any great enterprise, without the aid of the press. It is the great and only agent by which society is strongly moved. In the case of a railroad, the publisher of a paper to be sure, like all other citizens, is interested in the work. He is glad to discuss the subject as a popular topic in which his readers are interested; but if we could take an exact account of the direct and pecuniary advantage which railroads have derived from the support of the press, with what the press have received from free passes in return, we are satisfied that the balance would be found to be largely in favor of the former. In allowing the press free tickets, railroads are but discharging an indebtedness which is in equity due from them.

We are aware that railroad directors are, to a certain extent, agents—entrusted with the interests of others, as well as their own. Of course they should confine themselves to what they have good reason to suppose would be the action of their principals, were such principals acting for themselves.

We know that free passes must give a much greater annoyance to a line under the control of several distinct companies, like the central from Albany to Buffalo, than to a road of equal length under one company. Each company may feel itself under obligations to a different class of persons, who may have no good claim to the courtesy of the others, but who may wish to make a ticket over one road available for the whole line. Unless some general rule is established, one company dislikes to refuse a courtesy another has granted, and thus the free list is liable to exceed, by many times, its proper limit. This inconvenience and injury which the roads now moving in this matter have undoubtedly suffered, is no argument against the principle, only against the abuse of the system.

This subject has of late attracted much attention in Massachusetts, where the science of railroads is pretty well understood. Most of these roads have had a thorough overhauling, and in the irritated state of popular feeling, which has resulted from the enormous losses from the deterioration of railway property, and the diminished rate of dividends, every abuse has been sought to be corrected, and every improper privllege restrained.

In the outset the stockholders were for refusing any free passes whatever. But upon a full discussion of the subject, at their several meetings, the stockholders themselves became convinced that a total refusal to grant free passes would be injurious to their interests, and that the granting of them should be left to the discretion of the directors.—Such was the action of the stockholders of the Boston and Worcester railroad a few days since, and we believe that the action of this company reflects the views which prevail upon this subject in that section.

The view we take of this subject is, that it is for the interest of railroads to allow free passes. They should have this object in view, and confined within a limit that will secure it. We believe that they are founded in reason, and that if discontinued the same companies will gradually return to their use. The list should be extensively curtailed, but we do not believe it can be entirely dispensed with.

In either case we have no reason to compain.—The patronage and good will on our roads constitute our support—and none contribute to this more generally or more promptly than the companies from Albany to Buffalo; and if they will not allow us a "*free* ticket" to visit the "Falls" the next summer, (which, we are sorry to say, we fear would not be possible with one,) we luckily have sufficient patronage on the route to pay expenses both going and returning.

Machinery Oil.

WE the undersigned are now manufacturing an oil intended for the use of Railroads, Steamers and Manufacturing establishments. It has been in use several months and has given very general satisfaction. Our price is uniformly 70 cts. per gallon Enquiries or or orders attended to promptly. Address

ROBBINS, LANGDON & CO.,
133 Water street, corner Pine, New York.

CERTIFICATES.

Bridgeport, Nov. 7th, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: After about three months' trial of your oil, I have come to the conclusion to use it entirely on the engines on the New York and New Haven and the New Haven and Northampton Railroads for the following reasons:

1. It wears quite as long as sperm oil.
2. So far as I have tried it, it keeps the Journals equally cool as sperm oil.
3. I have no complaint from our men about cleaning the engines, and presume it is equally as easy to clean an engine by using your oil as it is in using sperm oil.
4. I can see no reason why it is not equal to the best of sperm oil for lubricating machinery.
5. There is in my opinion a very great saving to all parties in using your oil for lubricating machinery.
6. I believe it will stand cold weather better than any sperm oil. Very respectfully yours,

R. B. MASON, Supt. N.Y. & N.H. Railway.

Providence, March 22d, 1850.

Messrs. Robbins, Langdon & Co.,

Gentlemen: We have given your machine oil a thorough trial, and find that it possesses all the qualities that we could wish, as it works better than any sperm oil we have ever used. Our shafts that required oiling four times a day with the best sperm oil that we could get, work equally as well by the application of your oil twice a day, and your oil stands cold weather much better than any oil we have ever used. Our engineer having had years' experience in running and making engines, we put great confidence in his judgment, and he gives it as his opinion that your oil is fully equal to if not better than any he ever used; and we shall soon give you an order for more, as we do not want any other kind of oil as long as we can get yours.

Very respectfully yours,

JACKSON, CLARK & CO.

Steamer Bay State, Oct. 22d, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: In answer to your request for my testimony as to the machinery oil manufactured by you, I will say that I have used it for some time past on the Bay State, and am perfectly satisfied that your statement to me of its good qualities, is correct. As far as its lasting properties go, it wears equally long as sperm oil, runs perfectly free, and has no appearance of thickening. As seeing is better than hearing, I would recommend you to send your friends on board our boat, and they can then, by ocular demonstration, judge for themselves. Yours repectfully, JOHN GRAY,
Engineer of Steamer Bay State, Pier 3, N.R.

—

Steamboat Knickerbocker, Sept. 22, 1849.

Gentlemen: Mr. Hall, Agent of the Norwich and New London Steamboat Co., placed in my hands some of your machinery oil, which he desired me to use on the engine and other machinery, which I have done, and was so much pleased with the working, that I recommended the owners to give you their orders.

I have been using the article since August 19, and with perfect satisfaction, and I am well satisfied that your oil is as good as the best of sperm for lubricating machinery. I am youre very respectfully,
SAMUEL CARTER,
Engineer of Steamboat Knickerbocker, Pier 18, N.R.
To Messrs. Robbins, Langdon & Co.,
Oil Merchants, 133 Water street, New York.

—

Steamboat Worcester, N. York, Oct. 15, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I beg to acknowledge the receipt of your letter requesting my opinion as to your oil for machinery, which I had not time to reply to previous to my return to Norwich. I have been using your oil on the engine and machinery of the Worcester with perfect success, and have much pleasure in testifying as to its good qualities. In my opinion, the journals keep cooler with your oil than with sperm, and it wears equally well. Should you at any time wish to refer to me as to your oil, I beg you will do so without hesitation. Yours respectfully, JAS. CROOKER.
Engineer Steamboat Worcester, Pier 18, N. R.

—

New York, August 3d, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I received your letter in regard to your oil for machinery, which I handed to our engineer, and have much pleasure in sending you an extract from his letter to me on the subject: "I have applied the oil sent me upon our hot journals and cylinders, and find that they keep cooler with it than with sperm oil. I cannot find any fault with the oil, although I have watched it carefully. I have also tried it against an equal quantity of sperm oil, and find it wears quite as well." You are quite at liberty to show this extract to your friends, and shall be happy to give any further certificate you may require. WM. RIDER,
Treasurer Union India-rubber Co., 19 Nassau st. N.Y.

—

New York, March 22d, 1850.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I have been using your machinery oil on the engine and other machinery of the Steamer Southerner running from this to Charleston, and find it equal to sperm oil. I shall continue the use of the same, and you are at liberty to refer to me at any time.
Yours respectfully, DAVID N. MAXON,
Chief Engineer Steamer Southerner.

—

Steamboat C. Vanderbilt, N. York, Oct. 11, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: In reply to your inquiries respecting the qualities of your machinery oil, I am happy to inform you that I have been using the article sent me for some time past, not only on the engine but on all other machinery connected with it: and from a careful and close examination, I am well satisfied that your oil is as good as the best of sperm oil for lubricating machinery. I have recommended Mr. Lockwood the agent of the company, to give you their orders.
Yours respectfully, JAMES BAKER,
Engineer Steamboat C. Vanderbilt, Pier 3, N.R.

—

Brooklyn, August 29, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: Your letter of the 29th was received, and I am happy to inform you that I have used your machinery oil throughout my establishment, and I am still of the opinion that it is as good as the best of sperm oil for lubricating machinery. I should be pleased at any time to have your friends witness the working, and I am sure, after once doing so, will give you their orders. Please send me another cask by the evening of the 3d, and by so doing you will much oblige,
W. M. BURDON, Manufacturer of
Steam Engines and other Machinery, 102 Front st.

☞ A young man of experience in Surveying wishes a situation on a Railroad as an Assistant. Please apply at this office.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK,
March 6, 1850. Troy, N. Y.

Doremus & Nixon,

IMPORTERS AND FURNISHERS
OF
RAILROAD CAR AND COACH TRIMMINGS.

Plain Garnet Plush.	Fig. Garnet Plush (Butterfly pat.
" Crimson "	" Crimson " (Elegant.
" Scarlet "	" " " (Gen. Taylor.

BROCATELLES.

Crimson Silk Brocatelles.	Gold and Maroon do.
Gold and Blue "	" Brown "
Silk and Wool "	of every color.

MOQUETTS,
Of elegant designs and colors.
GERMAN CLOTH FOR CAR LININGS.
The most beautiful goods ever shown in this country, and the subscribers are the sole agents for the sale of them.

Oil cloths Enamelled with Gold.	These goods can be furnished in any dimensions req'd.
" " Silver.	
Do. Silver ground velvet printed.	

CURLED HAIR
Of every description and quality.
JNO. W. A. STRICKLAND, Agent.
New York, 1850. 1y16

Notice to Contractors.

CENTRAL OHIO RAILROAD.

THE Line of this road between Zanesville and Newark, a distance of about 26 miles, will be ready for examination about the 1st of May next, and Sealed Proposals for the Graduation, Masonry and Bridging of the said road will be received at the office of the company, in Zanesville, until the 20th of May next.

The graduation must be completed by the 1st day of January next—the masonry by the 1st day of June, 1851—and the superstructure of the bridges by the 1st day of July, 1851. The wood work of the bridges not to be commenced until the 1st of January next.

This work will embrace some heavy rock cutting; two bridges across the Pataskala or Licking river, and one across its north branch, also several important cuts and embankments.

The bids may be predicated either upon CARH payments entirely, or upon 75 per cent. cash, and 25 per cent. in the stock of the company.

To contractors at a distance, it may be as well to observe that this work is a part of the Great Central Line, projected as an extension of the Baltimore and Ohio Railroad, from the Ohio river to Central and Western Ohio and Indiana.

The company hope to have the line from Newark to Columbus, 34 miles, ready for examination by the 15th of June next, and for contract by the 1st of July next.

By order of the Board.
ROBERT MAC LEOD,
Engineer in Charge.
Zanesville, April 18, 1850.

Notice to Contractors.

Bellefontaine and Indiana Railroad.

SEALED PROPOSALS will be received at the Company's Office in SIDNEY, Shelby Co., Ohio, on and after Wednesday, May 5th, 1850, for doing the Grubbing, Clearing, Grading and Masonry, of such portions of the BELLEFONTAINE AND INDIANA Railroad, as can be prepared for letting by the 15th.

The line extends from some point on the Cleveland, Columbus and Cincinnati Railroad, through MARION, BELLEFONTAINE and SIDNEY, to the STATE LINE, between Ohio and Indiana, a total distance of about 120 miles.

It is expected that the line from the eastern terminus to Marion, about 22 miles and from Bellefontaine to Sidney, about 23 miles, will then be ready to let; and the remainder of the route as soon thereafter as it can be located and prepared.

Specifications and plans will be ready for inspection and all necessary information may be obtained on application at the Office of the Chief Engineer, in Marion, or to J. Pemberton, Resident Engineer, in Sidney, after the 5th of May.

By order of the Board of Directors.
W. MILNOR ROBERTS, Chief Eng.
Engineer's Office, Marion, Ohio,
March 18, 1850. 15tf

Railroad Iron Wanted.

Virginia and Tennessee Railroad Office,
Lynchburg, Va., March 16, 1850.

PROPOSALS will be received at this Office until the 6th of May next, for the delivery in Lynchburg, of Iron Rails for the Virginia and Tennessee Railroad, to be manufactured in or near this town of Virginia Iron.

The said Iron to be made of the best pig metal, and to be delivered at the following times, and in the following quantities, viz: Six thousand tons in the year 1851, and the remainder (about 15,000 tons) for the whole road, equally, in the years 1852 and 1853.

Separate proposals will also be received for the delivery in Lynchburg, of pig metal, at times and in quantities sufficient for the manufacture of the rails above mentioned, said delivery to commence as early as the first of November, 1850.

The rails and the pig metal will be subjected to strict inspection; the rails are to weigh about 60 lbs. per yard.

At the same time, proposals will be received for the above quantity of Iron, manufactured any where else in America or in England, to be delivered in Lynchburg or Richmond, under the same general conditions as those prescribed for Virginia Iron, manufactured at Lynchburg. Satisfactory security will be required.

Proposals for delivering any portion of the above mentioned quantity, and at periods varying from those specified above, will be considered.

By order of the Board of Directors.
CHAS. F. M. GARNETT,
15tf Chief Engineer.

To Contractors.

SEALED PROPOSALS will be received at the Office of the Nashville and Chattanooga Railroad Company in Chattanooga until the 20th day of May next, for the graduation and masonry of the Chattanooga Division of said Road—embracing a distance of 27½ miles.

The graduation will be heavy for about 15 miles, (in crossing Rackoon Mountain, and passing around Lookout Mountain bluffs), the balance, average work, The masonry will consist chiefly of cut stone Piers for Tennessee River Bridge, (about 4 000 Perches,) Piers for running Water Bridge, (about 2,000 Perches), and Pier for Lookout Creek Bridge, about 500 Perches.

Sealed proposals will also be received at the same time and place, for the graduation of 10 miles of the Eastern end of the Winchester Division—embracing some heavy work. Also the masonry of Elk River and Widow's Creek Bridges.

Plans and Profiles of the Work will be exhibited, specifications furnished, and all other desired information given, on application to Mr. James A. Corry, the Engineer in charge of the work, at the Company's Office in Chattanooga, from the 10th of May until the day of letting.

Before making bids the line should be throughly examined. The depths of the Cuts and Embankments can be ascertained from the centre stakes. The work to be commenced immediately after the letting. And that portion from Chattanooga to Lookout Bluffs to be completed by the 1st of December next. The other sections to be finished successively on toward the West end of the Division—the last by the 1st of October, 1851.

The most satisfactory testimonials will be required. The payments will be made in cash—reserving the usual 20 per cent. until the completion of the work.

By order of the Board.
JAMES H. GRANT, Chief Eng.
Nashville, Tenn., March 14, 1850.

PROPOSALS will be received at the offices of the Baltimore and Ohio Railroad Company, at Baltimore, Cumberland and Wheeling, up to Wednesday, the 22d day of May next inclusive, for the graduation and masonry of the portion of that road, extending from the bridge on the northwestern turnpike, over the Tygart's valley river, to a point on the south fork of Fish creek, near the mouth of Long Drain, embracing some 56 sections. Also the 8 sections between the mouth of Grave creek and the city of Wheeling.

A variety of work will be presented by the line to be let, which will include light and moderately heavy grading. Several short tunnels, and a considerable amount of bridge masonry.

Specifications may be had at the above named offices on and after the 1st of May ensuing, and further information obtained from the engineer upon the line.

Unexceptionable tesiimonials of character must accompany the bids, and the bidders are requested to state what other work, if any, they are engaged in, and when it will be completed.

The work must be energetically prosecuted.
By order of the President and Directors.
BENJ. H. LATROBE, Chief Engineer.
Baltimore, April 10, 1850. 16

Great American Engineering

AND MECHANICAL WORK, just published in medium folio, 75 cts.

Part IV of "Specimens of the Stone, Iron and Timber Bridges, Viaducts, Tunnels, &c. &c. of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, and elevations, of the Starucca, Pa., (stone) Viaduct of 17 arches, 50 feet span each, grade line averaging 90 feet above the valley bed, with the specifications, estimates, &c. &c. Also plates of the *details* of the timber and iron work of the elegant timber arch 275 feet span, at Cascade Creek, Pa. on the line of the N. Y. & Erie R. R.

N.B.—This work is published by subscription of the most eminent in the engineering profession of the U. States, and will be completed in 12 parts, at 75 cents each to those who remit their names and subscriptions before the 1st June next—when the first 6 parts or one half of the work will be published—after which the price will be raised to $1 per part.

To those making a present remittance of $5, and the remainder $4, when they have been supplied with the first six parts, the work will be forwarded regularly as published. Parties remitting $9 shall receive it monthly POST-FREE in any part of the United States.

"It is a work that was a great desideratum, and must prove of great benefit to the engineering profession generally, and especially to the tyro in practical engineering and mechanical knowledge; in truth it strikes us, that it would require years of labor and patient toil on the part of a young engineer to prepare the drawings, and collect the information that will be embodied in this work, and can now be secured for the trifling sum of $9"—[Scientific Amer. March 16. 1850.

In connection with this subject (iron Railroad Structures) we take occasion to call attention again to Mr. Duggan's valuable and expensive publication, exhibiting drawings, with full descriptions of the various stone, iron and wooden bridges, viaducts, tunnels, culverts, etc., of all the Railroads in the United States. Mr. Duggan is an accomplished Architect and Civil Engineer, who came from Ireland to this country to exercise his profession; but finding Railroad construction here, in many respects, different from that he had been accustomed to in Europe, he applied himself to the study of our system; and the fruits of his researches and investigations embodied in this work, are well calculated to meet the exigencies of engineers, and to assist draughtsmen, bridge builders, mechanics and students. The work will be supplied to subscribers only, in 12 parts, at 75 cents each.—[N. Y. Journal of Commerce, Feb. 14, 1850.

Published by GEORGE DUGGAN,
300 Broadway, New York.

To whom all communications should be addressed, and subscriptions forwarded.

FOWLER M. RAY'S Patent India-rubber Railroad CAR SPRING.

New York and Erie Railroad Shops.
Piermont, March 26, 1850.

This will certify that from practical experience in the use of Fowler M. Ray's India rubber Car Springs, I believe them to be far superior to any others now in use.

I have never known them to be affected by any change of temperature, as other Rubber Springs have been affected on this road.

I am at the present time repairing a Passenger Car that Mr. Ray and myself mounted with his springs about two years and eight months since.

The springs are at the present time as perfect, to all appearances, as when first applied to the car.

Respectfully yours,
HORACE B. GARDNER,
Foreman of the Car Shops.

—

Supt. Office N.Y. & H. R.R.,
New York, March 8, 1850.

This is to certify that we have used the Rubber Springs manufactured by Mr. F. M. Ray for the past twenty months, "both for Passenger and Freight Car Springs and Bumpers, and of different sizes," and have in every case given entire satisfaction, and I consider them the best spring now in use

M. SLOAT, Supt.

—

Harlem R.R. Depot,
New York, March 7, 1850.

This is to certify that we have used Mr. F. M. Ray's India-rubber Springs for over eighteen months, and find them to be easy and durable, and recommend them to railroad companies as being superior to anything we have tried.

J. M. SMART,
Foreman at 42d St. Depot.

Office of the New Jersey Railroad Co.,
Jersey City, March 7, 1850.

This is to certify that we have had Mr. F. M. Ray's India-rubber Springs in constant use under our cars, and as Bumper Springs for upwards of two years, and they have in every way given perfect satisfaction.

The present form of spring we deem far superior to the form of Disk, having used both forms, although we have none of those made in Disks at present in use.

We take pleasure in recommending these springs to all railroad companies.

J. P. JACKSON, Vice Prest.
New Jersey Railroad and Trans. Co.

—

Roxbury, February 28, 1850.

In compliance with your request, I take great pleasure in stating the result of my experience in the use of "Ray's Patented Vulcanised India-rubber Car and Engine Springs." We have used them nearly two years, and never had one fail in any way. The *cold weather* does not affect *them*, as it has *other* rubber springs we have used.

With sixteen years' experience as superintendent of machinery on the Boston and Providence railroad, I take pleasure in saying that your springs are the best we ever used, or I ever saw used elsewhere. We have 20 cars rigged with them, of which I can say that the springs are as good now as when first applied. I put 24 lbs. of the rubber under the forward end of one of our heaviest engines, taking off 250 lbs. of steel springs—it has been in use 18 months, and is in as good condition now as when first put under the engine.

Very respectfully yours,
GEO. S. GRIGGS,
Supt. of Machinery, Boston and Prov. R.R.

—

New York, March 11, 1850.

I have used the Patent India-rubber Spring purchased of Mr. Ray, upon the cars of the New York and New Haven Railroad, and have found them efficient and economical; and when applied to the axles and draw springs, believe them to be quite equal to any in use. I have found a combination of these springs with a steel spring under the transom beam a very satisfactory arrangement, and am now using this plan in all new cars.

Yours respectfully,
ROBERT SCHUYLER.

—

February 25, 1850.

From practical observation of the use of the India-rubber Car Springs, manufactured and sold by your company, we are entirely satisfied in their application, and do not hesitate to recommend them as elastic, durable, requiring no repairs for years, and retaining their consistency during all extremes of weather. We have applied them for the past two years, and consider them superior for all railroad purposes.

Yours truly,
OSGOOD BRADLEY, Car Builder, Worcester.
T. & C. WASON, do. Springfield.
DEAN, PACKARD & MILLS, do. do.
DAVENPORT & BRIDGES, do. Cambridgeport.

—

Office New Jersey Railroad Co.,
Jersey City, March 8, 1850.

FOWLER M. RAY, Esq.,

Dear Sir: In answer to your enquiries respecting the operation of the Vulcanised Rubber Springs, purchased by our company from you some two years since, I reply that they are superior to any spring in use, (that I have either seen or heard of).

The improved form of your spring, consisting of a solid piece of vulcanised rubber with bands on the outside, is far superior to your first form, consisting of disks of rubber with metallic plates interposed.

The last named form was tried, if you recollect, at a much earlier period; and then was replaced by your last form.

I have no hesitation in saying that your springs have given entire satisfaction, and most cheerfully recommend them to railroad companies throughout the country for the following reasons:

1st. The cost is 30 per cent. less.

2d. Saving of weight on each car of 8 wheels from 700 to 800 lbs.

3d. Less care and attention is required, as they are not liable to get out of repair.

4th. A great saving is secured in the wear and tear of the cars and rails from their great elasticity.

5th. The freedom from noise.

6th. There is greater safety in case of accident, as they cannot be broken.

7th. The comfort of passengers is enhanced sufficiently to pay the expense, waiving all the other reasons that I have given.

Should this fail to satisfy any person enquiring, you are at liberty to refer to me, No. 150 Washington St., Jersey City. Yours respectfully,

T. L. SMITH, Supt.

Fall River, February 2, 1850.

In answer to yours of the 20th ult. I would say that this company has for some 10 or 12 months past been using "Ray's India-rubber Springs." We have applied them to both passenger and freight cars with uniform success. They have invariably preserved their elasticity and consistency through all the extremes of weather; and we are now applying them whenever the steel spring fails. I am well satisfied that they are particularly adapted for railroad purposes.

Very respectfully yours,
GEO. HAVEN,
Supt. Fall River Railroad.

—

Jersey City, March 9, 1850.

This is to certify that the present form of Mr. F. M. Ray's India-rubber Car Spring I consider far superior to the form of Disk, having used both forms.

I take pleasure in recommending these springs to all railroad companies. DAVID H. BAKER,
Foreman of Car Shop of N.J. R.R. & Trans. Co.

—

Boston, March 5, 1850.

In answer to your enquiry about India-rubber Springs, I have to say that we have used them to a considerable extent on both freight and passenger cars, and also on several of our tenders; and I am very well satisfied that they answer all the purposes for which they are intended. I believe the India-rubber will soon supersede all other springs for cars and tenders. Yours truly, S. M. FELTON,
Supt. Fitchburg Railroad.

—

Old Colony Railroad Office,
Boston, March 6, 1850.

EDWARD CRANE, Esq.,
President New England Car Co.,

Dear Sir; In compliance with your request I would state that the Old Colony Railroad Comp'y have had in use upon their road, India-rubber Springs furnished by your company, for more than eighteen months past, during which time they have been extensively used under Passenger and Freight Cars, Locomotive Tenders, and for Drawer and Buffing Springs, with the most perfect success. The elasticity and consistency of the Rubber has never been unfavorably affected by either extremes of heat or cold—and from the experience which we have had in the use of Rubber Springs, I think them well adapted for railroad purposes—and therefore we have for some months past used Rubber almost exclusively, in all places where springs are required.

Respectfully yours, etc.,
JAS. H. MOORE,
Supt. O. C. Road.

—

Troy, February 27, 1850.

We have been using your India-rubber Car Springs for nearly two years—and we take pleasure in saying that in our opinion the rubber has to a certain extent already, and may eventually entirely supersede all other Springs for Railroad Car purposes. We now use it entirely for Draw Springs and Bumpers, considering it better and lighter than steel.

During our two years' experience in the use of it, we have not known any to lose their elasticity, or fail in any way; and we cheerfully recommend the rubber for railroad car springs. Very respectfully,
EATON, GILBERT & CO.

To Practical Machinists.

AN excellent opportunity now occurs to a practical Machinist, of WELL ESTABLISHED REPUTATION, and some capital, to engage extensively in the STEAM ENGINE, BOILER AND FOUNDRY BUSINESS.

An establishment is now ready for business, ample in all its details, including extensive wharf room, for any sized steamboats, and from its position, if properly conducted, will doubtless command a large share of business.

A practical Machinist, as a partner is required, to conduct the whole establishment: and only those FULLY COMPETENT need apply. Address (post paid) "MACHINE CO.," Box No. 741, Philadelphia, Pa.

1m14

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THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,
☞ *Sole Manufacturers,* ☜
No. 85 Liberty St.
NEW YORK.

And in the principal cities and towns in the U. States.

☞ The Premium of the AMERICAN INSTITUTE was awarded to the *Etna Safety Fuse* at the late Fair held in this city.

November 3, 1849. 1y

American Railway Guide,
AND POCKET COMPANION FOR THE
UNITED STATES;

CONTAINING Correct Tables, shownig the time for starting of trains from all stations, distances, fares, etc., on all the Railway lines in the U. States; also many of the principal Steamboat and Stage routes —accompanied by a complete RAILWAY MAP. Price, single copies 10 cts., or $1 per annum. Published on the first of every month, corrected from returns furnished by the Railway Superintendents throughout the Union.

This book has been compiled somewhat on the plan of Bradshaw's Guide, with such improvements in size, form and arrangement as have seemed desirable; and the publisher confidently hopes it will not be found liable to the objections of incompleteness and incorrectness, which have been made, and justly too, against various other similar works heretofore issued.

The subscriber having had the management of the NEW YORK PATHFINDER almost from its commencement, has enjoyed superior facilities in obtaining information relating to the thoroughfares of travel, and is therefore well qualified to prosecute with success the arduous undertaking of furnishing a complete and correct national guide book.

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Trimble, Isaac R.,
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On the European Plan,
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Between Broadway and Nassau St.,
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For the Purchase and Sale of Railroad Iron (new and old,) Boiler Plates, Pig and Bar Iron, Lead, Tin, Copper, Spelter, etc. Refers to
Messrs. Boorman, Johnston, & Co., New York.
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" Earps & Brink, Philadelphia.
" E. Pratt & Brother, Baltimore.
John Barstow, Esq., Providence.
Lewis Bullard, Esq., Boston.
February 9, 1850. 6m*

United States Railroad Guide and Steamboat Journal.
CONTAINING OFFICIAL TIME ADVERTISEMENTS, Tables of Stations, Distances, Fares, Time, etc., with much miscellaneous matter for the travelling public. Price 12 cents a copy. Yearly subscription $1. Published at 43 Ann street, New York.

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Manufacturers of Cast, Shear, German and Blister
STEEL,
Of all Descriptions, Warranted Good.
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STEEL AND FILES.
R. S. Denton,
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AGENT FOR
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Manufacturers of Cast, Shear, German and Blister
STEEL
Of all descriptions. *Warranted* Good
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Manufacturers of Machinists' Warranted Best Cast Steel *Files*, expressly for woring upon Iron and Steel, made very heavy for recutting.
☞ A full Stock of *Steel* and *Files* at all times on hand. 6m4

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Sup't Transortation Providence and Worcester R.R., Providenc, R.I. Has had 13 years' experience in Operating Railroads. Will go South or West if applied to.

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Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED —'Potomac' and other good brands of Pig Iron.

Cop Waste.
CLEAN COP WASTE, suitable for cleaning Railroad, Steamboat and Stationary Engines, constantly an hand and for sale by
KENNEDY & GELSTON,
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October 27, 1849, 3m

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MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
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E. BROWN AND SON Mathematical inst. makers No. 27 Fulton Slip, New York, make and keep for sale, Theodolites, Levelling inst., Levelling rods, Surveyors Compasses, and Chains, Cases of Mathematical drawing insts. various qualities, together with a general assortment of Ivory Scales and small insts. generally used by Engineers.

Samuel Kimber & Co., COMMISSION MERCHANTS

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AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.

July, 27, 1849.

James Herron, *Civil Engineer*,

OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,

PATENTEE OF THE

HERRON RAILWAY TRACK.

Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

To Railroad Companies.

—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.

NORRIS' LOCOMOTIVE WORKS,
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Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.

May 16, 1849.

Machinery Warehouse.

S. C. HILLS, No. 43 Fulton street, New York, has constantly for sale Steam Engines, Boilers, Lathes, Chucks, Drills, Planers, Force and Suction Pumps; Tenoning, Morticing and Boring Machines, Shingle Machines, Bolt and Nut Machines, Belting, Oil, Iron and Lead Pipe; Rubber, Percha and Leather Hose, &c., &c.

S. C. H.'s arrangements with several machine shops are such that he can supply, at very short notice, large quantities of machinery.

November 23, 1849.

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Bar Iron, Lead, Spelter, Tin, Copper, etc.,
No. 4 Liberty Place, MAIDEN LANE,
(Near Broadway,)
NEW YORK

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
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IRON.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "
10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
DAVID W. WETMORE.
New York, March 26, 1850. 3m

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, *Agent*,
Albany Iron and Nail Works.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.
COLLINS, VOSE & CO.,
158 South St.
New York, November 17, 1849.

Railroad Iron.

1,500 Tons weighing 58 lbs. per lineal yard.
500 " " 57 " "
500 " " 56 " "
500 " " 60 & 61 lbs, "

Also 2½x½ flat rails. All the above being of approved patterns. For sale by
DAVIS, BROOKS, & CO.,
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N.B.—Rails imported on commission, or at a fixed price.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns' for sale by
COLEMAN, KELTON & CAMBELL,
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IRONDALE PIG METAL, MANUFACTURED and for sale by the Bloomsburg Railroad Iron Co.
DUDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Railroad Iron.

500 Tons, afloat, weighing 57 pounds per lineal yard, for sale by
COLLINS, VOSE & CO.,
158 South St.
New York, November 17, 1849. 1m46

Railroad Iron.

1675 Tons, weighing about 61 lbs. per yard, 90 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.
New York, Feb. 25, 1850.

N.B.—B., J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the Unitad States.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best* quality for special purposes, is respectfully invited. COOPER & HEWITT,
17 Burling Slip, New York.
February 15, 1850.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.
JOHN F. WINSLOW, *Agent*.
Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.
THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
22 South William street,
February 3, 1849. New York.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.
November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.,
45 North Water St., Philadelphia.
March 15, 1849.

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAVING THEIR
IRON FOUNDRY AND MACHINE SHOP
In complete operation, are prepared to execute faithfully and promptly, orders for
Locomotive or Stationary Steam Engines,
Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,
Slide, Hand or Chuck Lathes,
Machinery for cutting all kinds of Gearing.
Hydraulic, Tobacco and other Presses,
Car and Locomotive patent Ring Wheels, warranted,
Bridge and Mill Castings of every description,
Gas and Water Pipes of all sizes, warranted,
Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

☞Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

☞ Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

American and Foreign Iron.

FOR SALE,

300 Tons	A 1,	Iron Dale Foundry Iron.
100 "	1, " " "	
100 "	2, " " "	
100 "	" Forge "	
400 "	Wilkesbarre " "	
100 "	"Roaring Run"	Foundry Iron.
300 "	Fort " "	
50 "	Catoctin " "	
250 "	Chikiswalungo " "	
50 "	"Columbia" "chilling" iron, a very superior article for car wheels.	
75 "	"Columbia" refined boiler blooms.	
30 "	1 x ¼ Slit iron.	
50 "	Best Penna. boiler iron.	
50 "	"Puddled" "	
50 "	Bagnall & Sons refined bar iron.	
50 "	Common bar iron.	

Locomotive and other boiler iron furnished to order.

GOODHUE & CO.,
New York. 64 South street

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,
No 57 South Gay St., Baltimore, Md.,

Offer for sale *Hot Blast* Charcoal *Pig Iron* made at the *Catoctin* (Maryland), and *Taylor* (Virginia), *Furnaces; Cold Blast* Charcoal Pig Iron from the *Cloverdale* and *Catawba*, Va., Furnaces, suitable for *Wheels* or *Machinery* requiring *extra* strength; also *Boiler* and *Flue Iron* from the mills of Edge & Hilles in Delaware, and *best quality Boiler Blooms* made from *Cold Blast Pig Iron* at the *Shenandoah Works*, Va. The productions of the above establishments can always be had at the lowest market prices for approved paper.

American Pig Iron of other brands, and *Rolled* and *Hammered Bar Iron* furnished at lowest prices. Agents for *Watson's Perth Amboy Fire Bricks*, and Rich & Cos. New York Salamander Iron Chests.

Baltimore, June 14, 1849. 6 mos

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
6m9 62 Buchanan's Wharf, Baltimore.

Iron.

THE SUBSCRIBERS having resumed the agency of the New-Jersey Iron Company, are prepared to execute orders for the different kinds and sizes of Iron usually made at the works of the company, and offer for sale on advantageous terms.—

150 tons	No. 1 Boonton	Foundry Pig Iron.
100 "	No. 2 do.	do. do.
300 "	Nos. 2 & 3 Forge	do. do.
100 "	No. 2 Glendon	do. do.
140 "	Nos. 2 & 3 Lehigh Crane	do do.
100 "	No. 1 Pompton Charcoal	do.
100 "	New-Jersey Blooms	
50 "	New-Jersey Faggoting Iron, for shafts	

Best Bars, ¾ to 4 inch by ¼ to 1 inch thick.
Do do Rounds and Squares, ¾ to 3 inch.
Rounds and Squares, 3-16 to 1 inch.
Half Rounds, ½ to 1 in. Ovals & Half Ovals ½ to 1½ in.
Bands, 1¼ to 4 inch. Hoops, ¾ to 2 inch.
Trunk Hoops, ¾ to 1½ in. Horse Shoe & Nut Iron.
Nail Plates. Railroad Spikes.

DUDLEY B. FULLER & Co., 139 Greenwich-st. and 85 Broad-st.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,
PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.
All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.
Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beetty, South Charles street, Baltimore.
May 6, 1848.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND
ENGINEERING AND MACHINE FILES,

which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.
November 23 1849.

Railroad Iron.

OF ANY PATTERN AND WEIGHT,
Of a Favorite Brand,
And deliverable in Bond, or Duty paid, at any Port of the U. S., contracted for on favorable terms, by

CHARLES ILLIUS,
20 Beaver St., New York.

Pig and other Iron also contracted for. Sole Agent for "*Baxter's Machine and Burning Oil*"—particularly adapted for "*Railroads*" and other Machinery—Preferred to Sperm by the many now using it, and 25 *per cent. cheaper.*

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Ogden & Martin's ROSENDALE CEMENT.

WE are prepared to enter into arrangements for supplying our Cement for public works or other purposes. We warrant the cement equal in every respect to any manufactured in this country. It attains a great degree of hardness, setts immediately under water, and is a superior article for masonry coming in contact with water, or requiring great strength.

For sale in tight barrels, well papered, at their office by OGDEN & MARTIN, 104 Wall st.
February 16, 1850. 1y*

The above cement is used in most of the fortifications building by government.

To Steam Engine Builders.

THE Undersigned offer for sale, *at less than half its cost*, the following *new machinery*, calculated for an engine of 62 inches cylinder and 10 feet stroke, viz.

2 Wrought Iron Cranks, 60 inches from centre to centre.
1 Do. do. Connecting Rod Strap.
2 Do. do. Crank Pins.
1 Eccentric Strap.
1 Diagonal Link with Brasses.
1 Cast Iron Lever Beam (forked).

The above machinery was made at the West Point Foundry for the U. S. Steamer Missouri, without regard to expense, is all finished complete for putting together, and has never been used. Drawings of the cranks can be seen on application to

HENRY THOMPSON & SON,
No. 57 South Gay St., Baltimore, Md.
Sept. 12, 1849.

P. H. Griffin,

Corner of Steuben and James Sts. Albany, N.Y.,

CONTINUES to manufacture copper flues for locomotive boilers, brewers' coppers, stills, tanner heaters, etc. Copper work in general, at the shortest notice. He has constantly on hand brass cocks, brass valves, copper pumps of every variety.

Orders promptly attended to. 1y14

To Railroad Companies.

FOR SALE—A Second-hand Locomotive Engine and Tender, of about 10 tons weight, in good order, and *warranted to perform well.* Any company wanting a cheap engine for a passenger or light burden train, will rarely meet with an opportunity so favorable as the present. The engine and tender are in perfect running order, and will be tested to the satisfaction of any one wishing to purchase. Price $1,500.

Address J. B. MOORHEAD,
Frazer P.O., Chester county, Pa.

P.S.—The Engine can be seen by calling on H. Osmond & Co., Car-builders, Broad st., Philadelphia.
September 6, 1849.

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 1 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in. thick. *Rubber and Gutta Percha Bands.* These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street.
New York, May 21, 1849.

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address JAMES ROWLAND,
Prest. Beaver Meadow Railroad & Coal Co.,
Philadelphia.
or, L. CHAMBERLAIN, Sec'y,
at Beaver Meadow, Pa.
May 19, 1849. 20tf

Rosendale Cement.

THE NEWARK AND ROSENDALE LIME AND CEMENT CO. are now manufacturing at their works in NEWARK, N. J., and Ulster county, N.Y., a very superior article of *Hydraulic Cement*—also Lime Calcine Plaster, etc. Contractors and dealers will find it to their advantage to call or make application before purchasing elsewhere. All communications addressed to the subscriber, at Newark, N.J., will be punctually attended to.

1y*15 HENRY WILDE, Secretary.

Fire Brick.

THE Subscribers have constantly on hand Rafford's Stourbridge, Oak Farms Stourbridge, Lister, Wortley, Red and White Welsh Fire Bricks, common and fancy shapes. Also,

ROOFING SLATES,

from the best Welch quarries, and of all sizes. Also,

COAL,

of all kinds—Liverpool Orrell and Cannel, Scotch, New Castle, Pictou, Sidney, Cumberland, Virginia, and all kinds of Anthracite coals. Also,

Pig Iron, Salt, etc., etc., for sale at the lowest market price. Apply to

SAMUEL THOMPSON & NEPHEW,
275 Pearl and 43 Gold Sts., New York.

November, 23, 1849.

NORRIS' LOCOMOTIVE WORKS,

SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought iron Tires made any required size, and Tire Bars bent and welded with dispatch.

Chilled Wheels for Cars, Tucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by

April 11, 1849. E. S. NORRIS.

To the Proprietors of Rolling Mills and Iron Works.

THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of *Rolls* (Rollers), both *chilled* and *dry-sand*, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burtt, J. & J. Rogers, Saltus & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Atwater, etc., etc.

F. & T. TOWNSEND.

Albany, August 18, 1849.

Passenger Car Linings.

THE Advertiser continues to make to order the Enamelled Car Linings which have been so highly approved the last three years, and are now exclusively used by all the Northern Railroads. No pains are spared to get out new styles, and adapt them to the tastes of every consumer.

Orders addressed to CHARLES STODDER, No. 75 Kilby street, Boston, will have prompt attention.

March 23, 1850. 2m

CAUTION.

RAILROAD COMPANIES and others are hereby cautioned against using or vending our improvement for easing the lateral motion as applied on Railroad Cars. Letters Patent having been granted to us in 1841, any party or parties so making or using said improvement without license from us will be proceeded against according to law.

DAVENPORT & BRIDGES.

To Miners and Mining Companies.

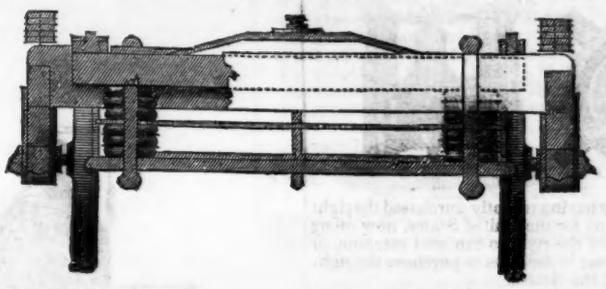
THE undersigned would respectfully call the attention of those persons engaged in mineral operations on Lake Superior to the following list of articles which will be sold on accommodating terms, viz:

600 bbls. Corn fed No. 1 Mess Pork.
500 " Stall fed Mess Beef.
25,000 lbs. "Sugar cured canvassed" Hams.
2,200 " Dried Beef.
60,000 " "Kiln dried" Corn Meal,
500 bush. White "Field" Beans.
300 " Canada" Peas.
500 " Dried Apples.
100 bbls. and half bbls. "cucumber" Pickles.
50 " Sour Krout.
30 bush. Onions.
1,000 Beefs' Tongues Smoked and in Pickle.
10,000 lbs. "Mould" Candles.
10,000 " "Hard" Soap.

Also, a full and large supply of all articles that may be required by Mining Companies and those connected with them. C. A. TROWBRIDGE,

127 Jefferson Avenue, Detroit, Michigan.

FULLER'S PATENT
INDIA RUBBER CAR SPRINGS.



RAILROAD COMPANIES are cautioned, before purchasing Springs, to examine the actual patents and judge for themselves.

Persons, under the Title of the New England Car Company, seeking fraudulently to invade Fuller's rights have put forth so many statements for the purpose of misleading the public, that an enumeration of some facts is absolutely necessary, for the purpose of putting persons interested upon their guard.

Fuller's patent is for the application of Discs of India-rubber with Metal Plates, for forming Springs for Railway Cars and Carriages—either one disc and two plates, or ten discs and plates, or any other number, are equally covered by the patent. Fuller is not bound to the use of short discs—he may use long discs and plates.

Ray's patent is simply and wholly the forming of air tight rubber cylinders, with hoops or bands round the outside, and the combination of elasticity of India rubber, with the elasticity of atmospheric air confined in the cylinder, and in no part of his patent is he authorised to use the form of spring which he is now fraudulently supplying to Railroad Companies. Such springs are direct and positive infringements of the very letter of Fuller's patent.

Fuller's patent is dated October, 1845, Ray's patent, August, 1848.

The spring patented by Ray never has been put in operation, and never can be made useful for Railroad cars.

A mere experiment, even if made, it is well known does not prove an invention; and it is ridiculous for such parties to hope to mislead the Presidents and Superintendents of Railroad companies, by claiming the invention because Ray alledges he made an experiment—which Fuller had made before him—had actually brought into working order, and obtained a patent for—and this too before Mr. Ray states he made his experiment—and that experiment not claimed to have been applied to a car or carriage.

Besides, the invention could not have been developed until India rubber, properly Vulcanised, could be made of a sufficient thickness. In the United States the art of vulcanising rubber by steam heat, (by which means only can a body of rubber having any considerable thickness be vulcanised,) was not introduced until after the grant by the American government of the patent for springs to Fuller—whereas the process of vulcanising rubber by steam heat was invented in England about three years previously, and was used by Fuller there. This fact refutes entirely the claim of invention put forth by Mr. Ray, and proves the impossibility of his pretensions being true.

Fuller was the first and only inventor of the spring. A Mr. Dorr, whose connection with Mr. Goodyear is well known in this country, applied in England to Mr. Fuller, after he had published and patented his invention, and introduced another party for the purpose of obtaining the agency for the United States. They were furnished with a complete set of drawings and models, and with instructions to make arrangements for the supply of material of American manufacture—from that hour to the present not a single communication has been received from them. Some of these identical models have been traced into the hands of parties now seeking to invade Fuller's rights, and who have exhibited them as specimens of their own invention.

After this, the conveyance was made by Goodyear to certain parties here for the use for railroad springs of what he calls his Metallic rubber. Comment is unnecessary.

There are 5 or 6 different processes for the manufacture of vulcanised rubber, patented by as many different parties, some here, some in England, either of which would probably make good springs.

A large and powerful company has been organised under [illegible], the particulars of which shall be given [illegible].

An action has been commenced against three railroad companies for infringement; and all other parties will assuredly be prosecuted if they continue farther to infringe upon Fuller's patent.

W. C. FULLER,

The only persons authorised to supply the Springs are G. M. KNEVITT, 38 Broadway, N. York, General Agent for the U. S.: and JAS. LEE & Co., 18 India Wharf, Boston. JOHN THORNLEY, Chestnut st., Philad.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, *Railroad* and *Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain;—and the managers refer with confidence to the following in the United States.

Eastern Railroad.	Boston & Maine Railroad.
Providence Railroad.	Providence and Wor. Road.
Western Railroad.	Concord Railroad.
Old Colony Railroad.	Fitchburg Railroad.
Schenectady Railroad.	Syracuse and Utica Road.
Balt. and Ohio Railroad.	Baltimore and Susq. Road.
Phila. & Reading Road.	Schuylkill Valley Road.
Central (Ga.) Railroad.	Macon and Western Road.

New York and Erie Railroad.

And other principal Railroads in the Western, Middle and Southern States.

E. & F. FAIRBANKS & CO.
St. Johnsbury, Vt.

Agents, { FAIRBANKS & Co., 81 Water St., N. York. A. B. NORRIS, 196 Market St. Philadelphia.

April 22, 1849. 1y*17

Patent India Rubber Steam Packing.

THIS article, made by the subscriber, who alone is authorised to make it, is warranted to stand as high a degree of heat *as any that has been or can be made by any person*—and is the article which has made the reputation of India Rubber Steam Packing and the demand therefor. A large assortment of all thicknesses requisite for any description of engines, steam pipes, valves, etc., constantly on hand and for sale by the manufacturer and patentee, who will give every information regarding its properties, mode of use, etc. at the warehouse. JOHN GREACHEN, JR.,

98 Broadway, opposite Trinity Church.

New York, October, 1849.

Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL
AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY J. IBBOTSON, Agent.,
218 Pearl st., New York.

February 25, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.

THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has givne universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNdersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

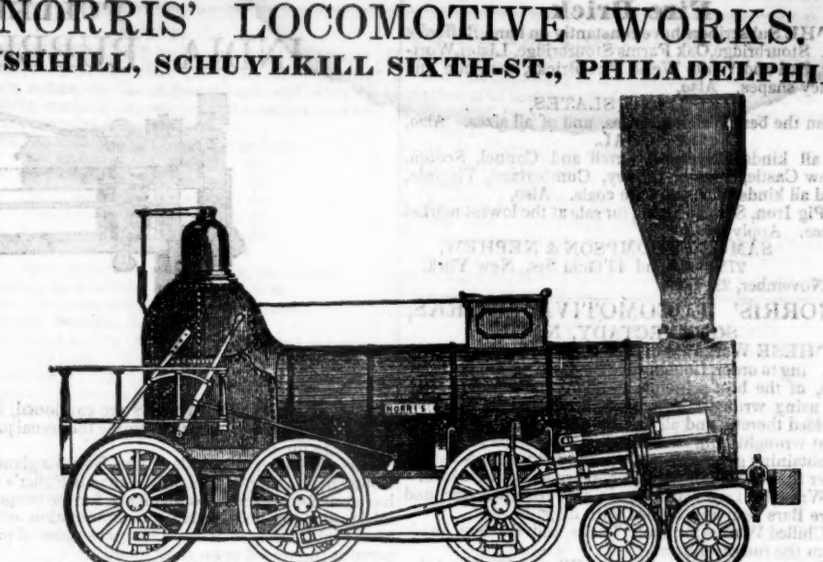
A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co.,
March 12, 1848.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front-street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y.

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

COLUMBUS, OHIO,

Railroad Car Manufactory.

RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited. 1y8

To Inventors and Patentees.

OWEN G WARREN, ARCHITECT, Has had many years' experience as Agent for obtaining Patents, both in this country and Europe, and will transact such business promptly and reasonably. Persons at a distance can have their business done by correspondence—without the necessity of visiting this city or Washington. Office No. 94 Merchants Exchange, Wall st., corner of Hanover st., up stairs. 1y3

MR. HALE:—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Spaings upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, or arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Goodyear, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanised India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most fo the other roads terminating in this city."

And yet Mr. Knevitt is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.
F. M. RAY, Agent, New York.

Boston, May 8, 1849.

Ballard's Improved JACK-SCREW.

PATENTED.

THE ADVANTAGES OF THIS Screw for Stone Quarries, Railroads, Steam Boiler Builders, and for other purposes are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires.

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler Makers have them in use—by whom they are highly recommended.

JACK SCREWS,
of various sizes, power and price, constantly on hand at the manufactory.

No. 7 Eldridge Street,
near Division Street.
New York, Jan. 19, 1850.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS,
Reading, Pa.

Hydraulic Cement.

KINGSTON LIME AND CEMENT CO.
OFFICE
271 PEARL-ST.
N. Y.

HYDRAULIC CEMENT, OF BEST QUALITY, manufactured at their works, for sale in lots to suit purchasers.

Also, Ground Lime, a superior article for Builders.

ISAAC FRYER, Sec'y.

January 19, 1850. 1y

Engine and Car Works,
PORTLAND, MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of $250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery.

HORACE FELTON,
Superintendent.

JAMES C. CHURCHILL,
General Agent and Clerk.

RAILROADS.

EASTERN RAILROAD.

WINTER ARRANGEMENT.

On and after Monday, October 8, 1849, trains leave Boston daily (Sundays excepted);

For Lynn, 7, 8½, 10 a.m., 12½, 2½, 4, 4½, 6½, p.m.
Salem, 7, 8½ 10, a.m., 12½, 2½, 4, 4½, 6½, p.m.
Manchester and Gloucester, 10 a.m., 4 p.m.
Newburyport, 7, a.m., 12½, 2½ 4½, p.m.
Portsmouth, 7, am., 2½, 4½, pm.
Portland, Me., 7, am., 2½, pm.

And for Boston,

From Portland, 8½ am., 4 pm.
Portsmouth, 7, 10½*, am., 6½*, pm.
Newburyport, 7½, 11½*, am., 3½ 7*, pm.
Gloucester, 7½, am., 1½pm.
Manchester, 8 am., 2 pm.,
Lynn, 7½, 8½*, 9½*, 10½ am., 12 55*, 2½* 4½* 8½* pm.
Salem, 7½, 8½*, 9*, 10½ am., 12 40*, 2½* 4½,* 8*, pm.

**Or on their arrival from the East.*

Freight trains each way daily. Office 17 Merchants' Row, Boston.

Feb. 3. JOHN KINSMAN, Superintendent.

ALBANY AND BUFFALO RAILROADS.—Four Trains daily, Sundays excepted, viz: Leave Albany, 6 a.m., 9 a.m., 2 p.m., 7 p.m. Reach Buffalo, 15 hours, 18 hours, 23 hours, 18 hours. Arrive from Buffalo, 7 p.m., 2½ a.m., 12½ m., 3½ p.m.

Passengers by the *Express Train* reach Buffalo from New York, and New York from Buffalo, in 24 hours. The Isaac Newton and Oregon connect at Albany with this Train. Baggage cars, with careful baggage masters, run through with all the trains.

For Schenectady, Saratoga Springs & Whitehall, Leave Albany at 7 a.m. and 2 p.m. For Schenectady only at 6, 7 and 9 a.m. and 12½, 2 and 7 p.m. For Erie Canal packets at 7 a.m. and 7 p.m. By Plank Road from Schenectady to Saratoga at all hours by stages, etc.

The *Eastern Trains* leave Albany at 7 a.m. and 3 p.m. The wagons of the company take baggage *free* between railroads and steamboats at Albany.

E. FOSTER, Jr., Sec'y
Albany and Schenectady Railroad Co.

Albany, August, 1849.

BOSTON AND MAINE RAILROAD.

Winter Arrangement, 1850.
Outward Trains from Boston

For Portland at 7 am. and 2½ pm.
For Rochester at 7 am., 2½ pm.
For Great Falls at 7 am., 2½, 3½ pm.
For Haverhill at 7 and 9½ am., 2½, 3½, 5½, pm.
For Lawrence 7, 7½, 9½ am., 12m. 2½, 3½, 4½ 5½, pm.
For Reading 7, 9½ am., 12m. 2½, 3½, 4½, 5½, 7½, 9½ pm.
For Medford 7½, 9½ a.m., 12½, 2½, 5, 6½, 9½ p.m.
The Station in Boston is on Haymarket Square.

CHAS. MINOT, Super't.

January 10, 1850.

NEW YORK AND HARLEM RAILROAD.
NEW ARRANGEMENT.

On and after Wednesday, October 17th, 1849, the Cars will run as follows, (Sundays excepted) until further notice:

Trains will leave the City Hall, New York, for—

Harlem and Morrisania at 6½, 8, 10, 11, 12 am., 2, 3½, 4, 5, 6½ pm.
New Village, at 8½, 10, 12 am., 3½, 5, 6½ pm.
Fordham and Williams' Bridge, at 8½, 10, 12 am., 2½ 3½, 5, 6½ pm.
Hunt's Bridge, Underhill's and Hart's Corners, at 8½, 10 am., 3½, 5 pm.
Tuckahoe and White Plains, at 8½, 10 am., 2½, 3½, 5 pm.
Pleasantville, New Castle, Bedford, Mechanicsville, Purdy's, Croton Falls, and intermediate stations, on signal, 8½ am., 2½, 3½ pm.
Brewster's, Towner's, Patterson, Paulding's, South Dover, Dover Furnace, and Dover Plains, 8½ am., 2½ pm.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave

Harlem and Morrisiana at 6 08, 7½, 8 37, 9, 10 6, 12 am., 1 43, 3 07, 3½, 5, 5 47 pm.
New Village, at 5 58, 8 27, 9 56 am., 1 33, 2 57, 5 36 pm.
Fordham and William's Bridge at 5½, 8 14, 9 43, 10 57 am., 1 20, 2 44, 5 24 pm.
Hunt's Bridge at 8 04, 9 33 am., 2 34, 5 16 pm. On signal.
Underhill's, at 7 56, 9 23 a.m., 2 26, 5 10 p.m. On signal.
Tuckahoe at 7 53, 9 18, 10 40 am., 2 23, 5 08 pm.
Hart's Corners at 7 38, 9 03 am., 2 08, 4 54 pm.—On signal.
White Plains at 7½, 8 55, 10 20 am., 2, 4 47 pm.
Davis' Brook at 8 40, 10 11 am., On signal. 4 39 pm. On signal.
Unionville, 8 27, 10 11 am. On signal. 4 29 pm.—On signal.
Pleasantville at 8 20, 9 56 am., 4 24 pm.
Champaqua, at 8 10, 9 50 am. On signal. 4 18 pm. On signal,
New Castle, at 7 56, 9 38 am.. 4 07 pm.
Bedford at 7 46, 9 32 am., 4 02 pm.
Mechanicsville at 7 36, 9 22 am., 3 52 pm.
Golden's Bridge, 7 28, 9 17 am. On signal, 3 47 p m. On signal.
Purdy's at 7 20, 9 09 am., 3 39 pm.
Croton Falls, at 7½, 9 04 am.,3 34 pm.
Brewster's, at 8 50 am., 3 20 pm.
Towner's, at 8 35 am., 3 05 pm.
Paterson, at 8 27 am., 2 57 pm.
Paulding's, at 8 17 am., 2 47 pm.
South Dover, 8 02 am., 2 32 pm.
Dover Furnace, 7 55 am., 2 25 pm.
Dover Plains, at 7 45 am., 2 15 pm.

The trains for Harlem and Morrisiana leaving City Hall at 6½, 8, 10, 11, 12, 2, 4 and 6½, returning from Morrisiana and Harlem at 6 08, 7½, 9, 12, 1 43, 3 07, 3½ and 6 o'clock, will land and receive passengers at 27th 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th and 132d streets.

The Dover Plains train from New York at 2½ pm., returning leaving Dover Plains at 7½ am., will not stop between White Plains and New York, (except at Tuckahoe, Williams' Bridge and Fordham,) unless to leave passengers coming from above Croton Falls.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 27th street.

Freight Trains leave New York at 1 o'clock pm.—Returning, leaves Dover Plains at 12 o'clock m.

For Sunday Aarrangements, see hand bills.

M. SLOAT, Sup't.

NEW YORK AND ERIE RAILROAD. OPEN TO ELMIRA.

On and after the 8th of October, the trains will run as follows, (Sundays excepted):

THROUGH PASSENGER TRAINS from New York to Elmira, will leave the Company's Pier at the foot of Duane street, at 7 o'clock a.m. and 5 o'clock p.m. stopping at all the way stations.

From Elmira the through trains will leave for New York at 5 o'clock a.m. and 6½ p. m., stopping also at all the way stations.

A SPECIAL WAY TRAIN, for Port Jervis and intermediate stations, except Sufferns, will leave New York every Saturday at 3 p. m., and will leave Port Jervis for New York every Monday morning, at 4 55 o'clock.

A MILK TRAIN, with Passenger Cars attached, will leave Port Jervis for New York at 3 o'clock a.m. and returning will leave New York for Port Jervis at 3 p.m. Another milk train with passenger car, will leave Piermont for Otisville at 9 am., and returning leave Otisville at 4 55 p.m., connecting with the freight boats to New York. The milk trains do not connect with the P. and R. railroad.

FREIGHT.—Freight leaves New York every night for all the regular stations on the road. A freight train will leave Elmira every morning at 3 20 o'clock a.m. —A freight train will leave Port Jervis for New York every morning at 5 o'clock, and another at 8 a.m. with market freights.

A Special Train for cattle and other live stock, will leave Elmira on Tuesdays and Fridays at 12 20 p.m.; and from Port Jervis, for New York, on Wednesdays and Saturdays, at 8 40 a.m.

FARE from New York to Elmira $5 75. The intermediate stations in proportion.

COMMUTATION TICKETS, at lower rates, for the stations between New York and Port Jervis, can be purchased at the New York and Piermont offices.

The Steamboat ERIE leaves New York for Piermont every day at 3 o'clock, and returns on the arrival of the train from Elmira, arriving at New York at about 7½ p.m.

JAMES P. KIRKWOOD, Superintendant.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.

		Between Augusta and Dalton. 271 miles.	Between Charleston, and Dalton. 408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot	$0 18	$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 65
	Cotton, per 100 lbs.	0 45	0 70
	Molasses per hogshead	8 50	13 50
	" " barrel	2 50	4 25
	Salt per bushel	0 18	
	Salt per Liverpool sack	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freights payable at Dalton.

F. C. ARMS,
44*1y Sup't of Transportation.

LITTLE MIAMI RAILROAD.—SUMMER ARRANGEMENT.

CINCINNATI & SANDUSKY.

FIRST Passenger Train leaves Depot on East Front street, at 5 o'clock 10 minutes A. M. stops for breakfast at Morrow, and arrives at Springfield at 11 10 A. M. Leaves Springfield for Sandusky at 11 50 A. M.

Second Passenger Train leaves Depot 3 P. M. arrives at Springfield at 9 P.M. Passengers take tea at Springfield, and leaves for Sandusky at 9¼ P. M.

RETURNING—First Train leaves Springfield at 4 A. M. Stop for breakfast at Xenia, and arrives at Cincinnati at 10 15 A. M.

Second Train leaves Springfield at 2¼ P. M. Stop for tea at Morrow, and arrives at cincinnati, at 8¼ P. M.

Passengers taking the Morning Train arrive at Sandusky at 9 P. M. Those taking the Afternoon Train arrive at 7¼ A. M. next morning, and proceed directly on in the boats.

Passengers for columbus, Zanesville, Wheeling, and intermediate towns, should take the 5, 10 A. M., Train.

The Ohi Stage Company are running the following Lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 3 o'clock, pm. Train from Cincinnati.

Fare from Cincinnati to Xenia			$1 90
Do	do	Springfield	2 50
Do	do	Sandusky City	6 50
Do	do	Buffalo	10 00
Do	do	Columbus	4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENT, Superintendent.

☞ The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value above that amount.

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement.
April 1st, 1849.—Fare $3.

Leave Philadelphia 8½ am., and 10 pm.
Leave Baltimore 9 am, and 8 pm.
Sunday—Leave Philadelphia at 10 pm.
" " Baltimore at 8 pm.
Trains stop at way stations.

Charleston, S. C.
Through tickets Philadelphia to Charleston, $20.

Pittsburg and Wheeling.
Through ticket, Philadelphia to Pittsburg, $12.
" " Wheeling, 13.
Through tickets sold at Philadelphia office only.

Wilmington Accommodation.
Leave Philadelphia at 12 m. 4 and 7 pm.
Leave Wilmington at 7¼ am., 4¼ and 7 pm.

Newcastle Line.
Leave Philadelphia at 2¼ pm.—Baltimore at 1¼ pm
Fare $3.—Second class, $2.
N.B.—Extra baggage charged for.

I. R TRIMBLE, Gen. Supt.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains run daily, except Sundays, as follows:

Leave Baltimore at	9 am. and 3½ pm.
Arrive at	9 am. and 6½ pm.
Leave York at	5 am. and 3 pm.
Arrive at	12¼ pm. & 8 pm.
Leave York for Columbia at	1½ pm. & 8 am.
Leave Columbia for York at	8 am. & 2 pm.

Fare:

Fare to York	$1 50
" Wrightsville	2 00
" Columbia	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg	$9
Or via Lancaster by railroad	10
Through tickets to Harrisburg or Gettysburg	3

In connection with the afternoon train at 3¼ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at 5¼ pm.
Returning, leaves Owing's Mills at 7 am.

D. C. H. BORDLEY, Sup't.
31 1y Ticket Office, 63 North st.

PHILADELPHIA & READING RAILROAD. Passenger Train Arrangement for 1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock am.

The Train from Philadelphia arrives at Reading at 12 18 m.

The Train from Pottsville arrives at Reading at 10 43 am.

	Miles.	No. 1.	No. 2
Between Phila. and Pottsville,	92	$3.50 and	$3.00
" " Reading	58	2.25 and	1.90
" Pottsville "	34	1.40 and	1.20

Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf.

BALTIMORE AND OHIO RAILROAD AND WASHINGTON BRANCH.

On and after January 1, 1850, Passenger Trains will run as follows:

Leave Baltimore for Ellicott's Mills, Frederick, Harper's Ferry, Martinsburg, Hancock and Cumberland, every morning at 7½ o'clock. This line carries the Great Mail, and connects with Post Coaches at Cumberland, for Wheeling and Pittsburg, over the National Road. Also with the Winchester Trains, at Harper's Ferry. N.B.—Passengers for Pittsburg take the steamers of the Monongahela slack water navigation at *Brownsville*, only 76 miles from Cumberland.

Leave Baltimore for Ellicott's Mills, Frederick and Harper's Ferry, daily, except Sunday, at 4½ p.m.

Leave Baltimore for Washington City, daily, at 6 a.m. and 5 p.m.—daily, except Sunday, at 9 a.m. The early train connects with the Great Southern Line, via Fredericksburg and Richmond, to Charleston.

Leave Cumberland for Baltimore, etc., at 8½ a. m., daily, connecting with the train from Winchester at Harper's Ferry—with the Evening Train to Washington City, at the Relay House—and with the Evening Train to Philadelphia, at Baltimore. Time for arriving at Baltimore, 5½ p.m.

Leave Harper's Ferry for Baltimore, daily, except Sunday, at 7½ a. m—taking in Passengers who leave Frederick at 8½ a.m.

Leave Washington for Baltimore, daily, at 6 a.m. & 5½ p.m., and *daily, except Sunday*, at 9½ a. m. The early train connects at the Relay House with the morning line to Cumberland and the West, and at Baltimore with the day line to Philadelphia and New York.

Through tickets are sold at *Philadelphia and Baltimore* for Pittsburgh and Wheeling, and at *Philadelphia and New York* for Charleston, S. C., at the following

RATES OF FARE.

	To Pittsburg. In winter.	Summer.	Wheeling. Win.	Sum.	Charleston.
From Philadelphia,	$13	$12	$14	$13	$20
" Baltimore,	11	10	12	11	
" New York,					20

Passengers leaving New York not later than the afternoon line via Newark, etc., reach Baltimore in season to take the next morning's lines to the South and West.

Passengers leaving Cumberland in the morning and Washington in the evening lines, reach Baltimore in season to proceed to Philadelphia by the evening train at 8 p. m.—so as to reach New York before noon the next day.

An Emigrant line by burthen cars, leaves Baltimore every morning, except Sundays, at 4 o'clock—connecting with a line of the previous day from N. York —and at Cumberland with a wagon line to Pittsburg or Brownsville and Wheeling. Fare by this line:

From New York to Pittsburg,	$8 00
" Philadelphia "	6 50
" Baltimore "	5 00

By order, J. T. ENGLAND, Agent.

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily $26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia 22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

LAKE SUPERIOR LINE.
Cleveland and Detroit,
TO
SAULT STE. MARIE, CARP RIVER, COPPER HARBOR, EAGLE RIVER, ISLE ROYAL, ONTONAGON AND LA POINT.

The Proprietors of this line having added largely to their facilities for transportation on this route, will be prepared to ship Goods to any part of Lake Superior during the coming season, and contract for the delivery of Copper Ore to either Boston, New York, or Pittsburg, being connected with the Troy and Western Line, from Detroit to New York, and a Daily line of Canal Boats

FROM CLEVELAND TO PITTSBURG.

Lakes Huron and Erie.

For this portion of the route, the Proprietors are fitting up a large Boat, with a powerful low pressure engine, and a spacious upper cabin, with state rooms, to take the place of the Franklin, which will leave CLEVELAND every *Monday Evening* at 7 o'clock, and DETROIT every *Tuesday Afternoon* at 2 o'clock, going to MACKINAW and the BRUCE MINES, and arriving at SAULT STE. MARIE on Thursday morning. The Franklin will leave Detroit every Friday for Mackinaw and Sault Ste. Marie, via the Bruce Mines. For the transportation of heavy masses of *Copper*, a Propeller will make trips as occasion may require.

Lake Superior.

Mr. McKnight, one of the Proprietors, is constructing a Wharf to the Channel Bank, at the head of the Portage, which will enable them to load their Propellers, NAPOLEON AND INDEPENDENCE, with but 24 hours' detention at Sault Ste. Marie. One of the Propellers will leave every *Friday*, making a trip through the Lake, touching at Carp River, Ontonagon and Isle Royal.

The great expense incurred in building wharves to facilitate business, it is hoped, will entitle the Proprietors of this Line to Patronage. Goods shipped by either G. WILLIAMS & CO., or S. P. BRADY, Agents, Detroit, will be receipted through to their destination on Lake Superior. Letters addressed to S. McKNIGHT, Detroit, or Sault Ste. Marie, will receive attention. Supplies will be purchased and delivered at any point on Lake Superior, on the best possible terms, and all orders filled with articles of as good quality as the market affords.

Canada Line.

To facilitate the forwarding of Goods for the Canada Companies, a connection has been made with PARK & CO., managing owners of the Propeller *Earl Cathcart*, forming a direct line from Montreal to the Bruce Mines and Sault Ste. Marie. Goods sent by this line, care of PARK & CO., Amherstburg, or CHAS. HUNT, Esq., Windsor, will be immediately forwarded, and at prices decidedly to the advantage of parties in Toronto or other Canadian Ports.

S. M'KNIGHT,
J. R. LIVINGSTON,
P. B. BARBEAU.

January, 1850.

AGENTS.

G. Williams & Co., } Detroit.
S. P. Brady, }
P. L. Sternberg & Co., Buffalo.
Charles Hunt, Windsor.
Park & Co., Amherstburg.
W. A. Otis & Co., } Cleveland.
Crawford and Chamberlain, }
Rice, Clapp & CO., New York.
W. M. Gorrie, Toronto.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, *Patterson, N. J.* The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N.J. or 74 Broadway, New York.

CENTRAL RAILROAD FROM SAVANNAH TO MACON, (Ga.) 190½ miles.

Passenger Trains leave Savannah and Macon daily at 7 a.m.

Passenger trains arrive daily at Savannah, 6 15 p.m.
" " " " Macon, 6 45 p.m.

This road, in connection with the Macon and Western road from Macon to Atlanta, and the Western and Atlantic road from Atlanta to Dalton, now forms a continuous line of 391½ miles in length* from Savannah to Dalton, Murray county, Ga. and with the Memphis Branch railroad, and Stages connect with the following places:

Tickets from Savannah to Macon,			$5 75
"	"	Atlanta,	9 50
"	"	Augusta,	6 50
"	"	Columbus,	15 00
"	"	Opelika,†	17 00
"	"	Jacksonville, Ala.,	20 00
"	"	Talladega, Huntsville Decatur, Ala.,	22 00
"	"	Tuscumbia, Ala.,	22 50
"	"	Tuscaloosa, Ala.,	
"	"	Columbus, Miss, Aberdeen, " Holly Springs Nashville, Tenn.	28 00
"	"	Murphreesboro' Columbia, do.,	25 00
"	"	Memphis, do.,	30 00

An extra Passenger Train leaves Savannah on Saturdays, after the arrival of the Steam-ships from New York, for Macon, and connects with the Macon and Western railroad; and on Tuesdays, after the arrival of the Macon and Western cars, an extra Passenger Train leaves Macon to connect with the Steam ships for New York.

Stages for Tallahasse and intermediate places connect with the road at Macon, Mondays, Wednesdays, and Fridays, and with Milledgeville at Gordon daily.

Passengers for Montgomery, Mobile and New Orleans take stage for Opelika from Barnesville through Columbus, a distance of 97 miles, or from Griffin thro' West Point, a distance ot 93 miles.

* The Western and Atlantic railroad will soon be completed between Dalton and Chattanooga, a distance of 423½ miles from Savannah, of which due notice will be given.

† Head of the West Point and Montgomery railroad, on which the fare to Montgomery is about $2.

RATES OF FREIGHT FOR MERCHANDIZE GENERALLY, FROM SAVANNAH TO MACON.

Measurement Goods.—Boxes of hats, bonnets, furniture, shoes, saddlery, dry-goods, and other measurement goods, per cubic foot - - 13 cents.
Crockery Ware, in crates, boxes or hhds, per cubic foot. - - - - 10 "
Goods by Weight, 1st class.—Boxes of glass, paints, drugs & confectionary, per 100 lbs., 50 "
2d class—Sugar, coffee, rope, butter, cheese, lard, tobacco, leather, hides, copper, sheet and hoop iron, tin, hard and hollow ware, rice, boxes soap and candles, bagging, and other heavy articles not enumerated below, per 100 lbs., - - - - 45 "
3d class—Flour, bacon, liquors, pork, beef, fish, tallow and beeswax, per 100 lbs., 40 "
4th class—Mill-gearing, pig and bar iron, grind and millstones, nails, spikes and coal, 100 lb. 30 "
Barrels of beets, bread, crackers, potatoes, ice, fruit, oysters, onions, and all light bbls, each, 75 "
Oil and molasses per hhd., (smaller casks in proportion) - - - $6 00 "
Salt per sack not exceeding 4 bushels, - 50 "

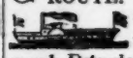
☞ Goods consigned to Thos. S. Wayne, Forwarding Agent, Savannah, will be forwarded free of commission. WM. M. WADLEY, Supt.

Savannah, Ga., February 24, 1850.

ENGINEERS' AND SURVEYERS'
INSTRUMENTS MADE BY
EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.

No 23 Pear street, near Third, below Walnut, Philadelphia.

GREAT NORTHERN & SOUTHERN MAIL ROUTE. From New York to Charleston, S. C. daily, via *Philadelphia, Baltimore, Washington City, Richmond, Petersburg, Weldon and Wilmington, N. C.*



Travellers by this route, leaving New York at 4½ p. m., Philadelphia at 10 p.m., and Baltimore at 6 a.m., proceed without delay at any point on the route, arriving at Richmond, Va., in a day, and at Charleston, S. C., in two and half days from New York.

Through tickets from New York to Charleston, $20 00
" " Baltimore to Richmond, 7 00
" " " " Petersburg, 7 50

For tickets to Richmond and Petersburg, or further information, apply at the *Southern Ticket Office, adjoining the Washington Railroad Ticket Office, Pratt Street, Baltimore* STOCKTON & FALLS.

October, 1849.

ST. LAWRENCE & ATLANTIC RAILROAD COMPANY.

Notice is hereby given that the Trains run twice per day between

Montreal and St. Hyacinth, leaving each terminus alternately, until further notice.

Leaving St. Hyacinth at - - 7 am.
" " - - 3 pm.
Leaving Montreal at - - 10 am.
" " - - 6 pm.

THOMAS STEERS, *Secretary.*

May 31, 1849.

WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA, GA., TO CHATTANOOGA, TENN. 140 Miles.

PASSENGER SCHEDULE.

Leave Chattanooga daily, Sundays excepted, at 8½ a.m.
Arrive at Kingston . . . by 12 m.
" Dalton . . . by 3 p.m.
" Chattanooga . . . by 6 "
Leave Chattanooga daily, Sundays excepted, at 7 a.m.
Arrive at Dalton . . . by 9½ "
" Kingston . . . by 12 m.
" Atlanta . . . by 4 p.m.

The fare is now permanently reduced to *three* cents per mile for way as well as through Passengers; children and servants *two* cents per mile.

There are two Railroad routes from Atlanta to the Seaboard, viz: one by the Georgia Railroad to Augusta, and thence to Charleston by the South Carolina Railroad; the other by the Macon and Western Railroad to Macon, and thence to Savannah by the Central Railroad.

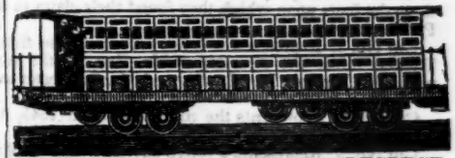
At Kingston, 60 miles north of Atlanta, the Rome Railroad branches off to Rome on the Coosa river, which admits of steamboat navigation as far down as Greensport in Ala. Mail stages are in operation from Rome leading towards Tuscaloosa, Ala., Columbus, Miss., Memphis, Tenn., etc.

At Dalton, 100 miles north of Atlanta, a line of stages branches off to Knoxville, Tenn., which will be superseded by the East Tennessee and Georgia Railroad as rapidly as the same is completed.

At Chattanooga a number of steamboats are in successful operation on the Tennessee river, and from that terminus of the road stages run to Nashville, which will be superseded by the Nashville and Chattanooga Railroad as rapidly as the same is completed.

WM. D. FULLTON, Supt. Transp.
Transportation W. & A. R. R.,
Atlanta, March, 1850.

CAR MANUFACTORY
CINCINNATI, OHIO.



KECK & DAVENPORT WOULD RESPECTfully call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848. 44tf

FOWLER M. RAY'S
METALLIC INDIA RUBBER CAR SPRINGS.

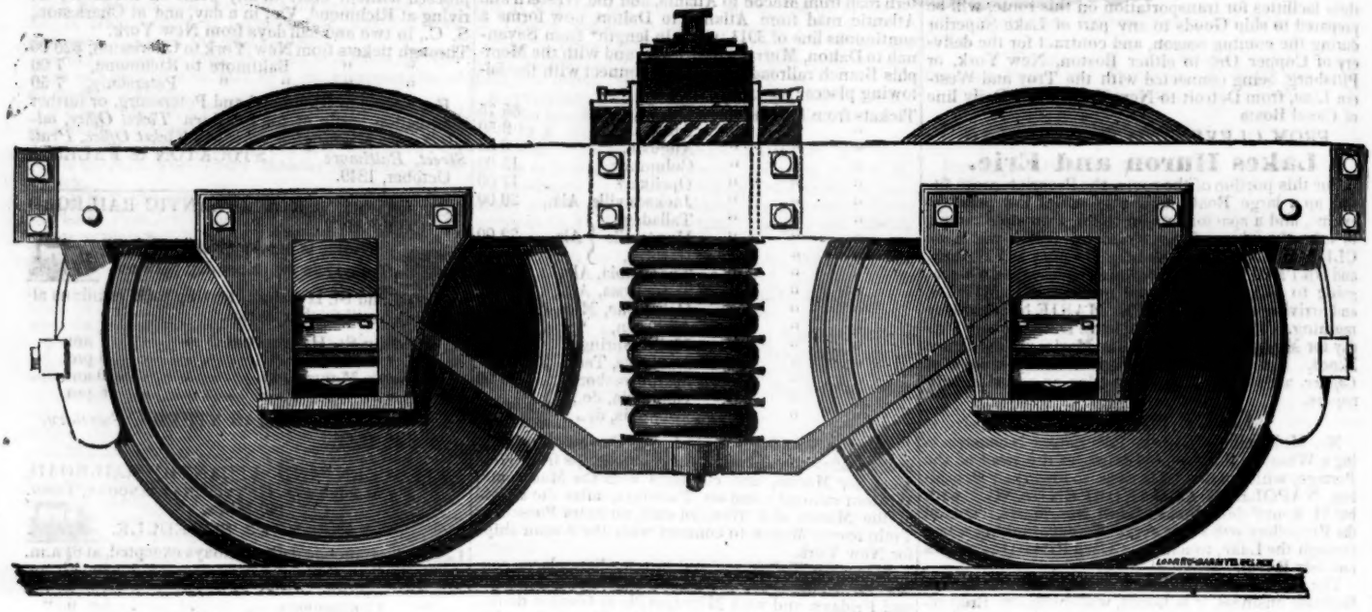


Fig. 1.

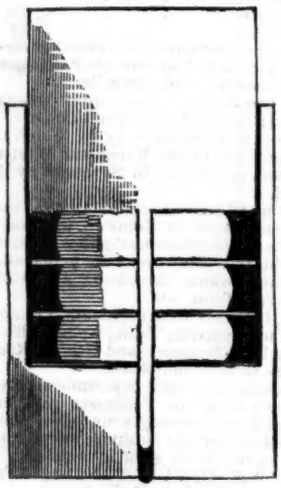


Fig. 2.

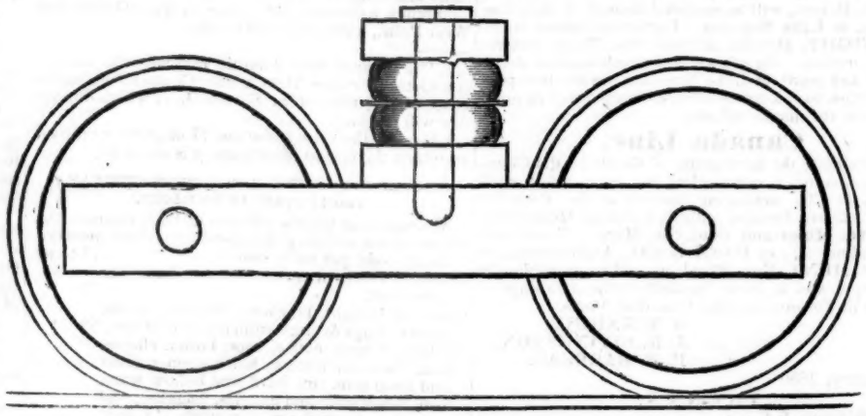
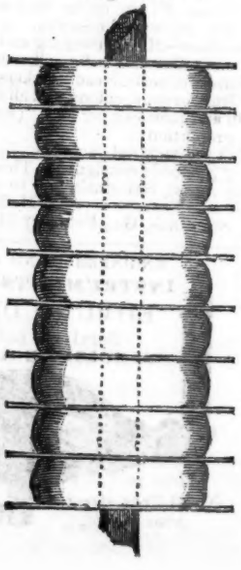


Fig. 3.



So much has been published for the purpose of misleading the public in regard to the inventorship of the India-rubber Railroad Spring, patented in the United States by Mr. W. C. Fuller, that the New England Car Company, proprietors of this invention, have deemed it proper, for the information of Railroad Companies, Car Builders and the public generally, to lay before them the facts upon which they found their claim to this invention, and to a Patent therefor.

Cut No. 1, Represents a cross section of the first model made by Mr. Tucker, under the direction of Mr. Ray, in the summer of 1844, and to which Mr. Tucker, Mr. Bradley and Mr. Bannester testify as being the model marked "B."

Cut No. 2, Represents the model made in 1845, to which Mr. Osgood Bradley and Gen. Thos. W. Harvey have testified.

Cut No. 3, Represents a rough sketch made by Mr. Ray in 1844, which he gave to a man about departing for England to take out some patents, who promised to write to Ray after his arrival in that country—which promise he has probably forgotten.

Mr. W. C. Fuller, of England, patented the above Spring in that country on the 23d October, 1845. He filed his enrollment April 23d, 1846, and on the 22d October, 1846, he took out a patent in the United States under the title, "For Improvement in Railway Carriages," when the improvement consisted in the spring, and not in the carriage.

The reader will perceive by the annexed testimony, that the India-rubber Railroad Car Spring was invented by Mr. Ray about two years previous to the date of Mr. Fuller's enrollment.

The Depositions are omitted for want of room, but will be published in full in the course of a few weeks.

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☞ LETTERS and COMMUNICATIONS to this Journal may be directed to the ***Editor***,
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136 NASSAU STREET.